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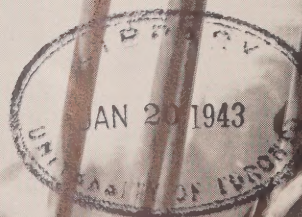
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HYDRO

Gov. & C.
of Ont.
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News

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



SOLID FOUNDATION

Save HYDRO

Speed ONTARIO'S
WAR INDUSTRIES



**TEXTILE MILLS WEAVE 220,000
YARDS OF WOOL CLOTH EVERY
6 DAYS TO CLOTHE OUR FORCES**

● This is a big war. Every industry has to do big things.

In the hundreds of textile plants in this Province, over 50,000 workers are adhering to day and night schedules once undreamed of. Every month nearly a million yards of wool cloth is rushed to clothing makers.

Thousands in the armed services, the Reserve Army and Women's Auxiliary units must be outfitted.

"Speed up—increase your produc-

tion—enlarge your capacity"—is the order of the day.

Hydro's large pool of over 2,000,000 electrical horsepower is being strained. Yet every war demand must be met!

As fall approaches—as hours of daylight shorten—power demands will increase substantially. The need may be greater than capacity production. It may be necessary to curtail extension for civilian use. Save power—help your Hydro to meet this mounting war-time demand!



THE HYDRO-ELECTRIC POWER COMMISSION OF



ONTARIO

HYDRO News



formerly The **BULLETIN**

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC
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•
EDITOR: WILLIAM RATTRAY.

•
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The Front Cover



"Solid Foundation" is the title of this month's front cover which is another noteworthy contribution from J. H. Mackay of the Commission's staff. This time Mr. Mackay focussed his camera upon the installation for an anchor tower which carries 110,000-volt tie line. The tower, weighing 24,000 lbs., is supported by four footings, each of which goes 13½ feet below the ground into steel reinforced concrete foundations. Each foundation weighs approximately 39,000 lbs.

Volume 29

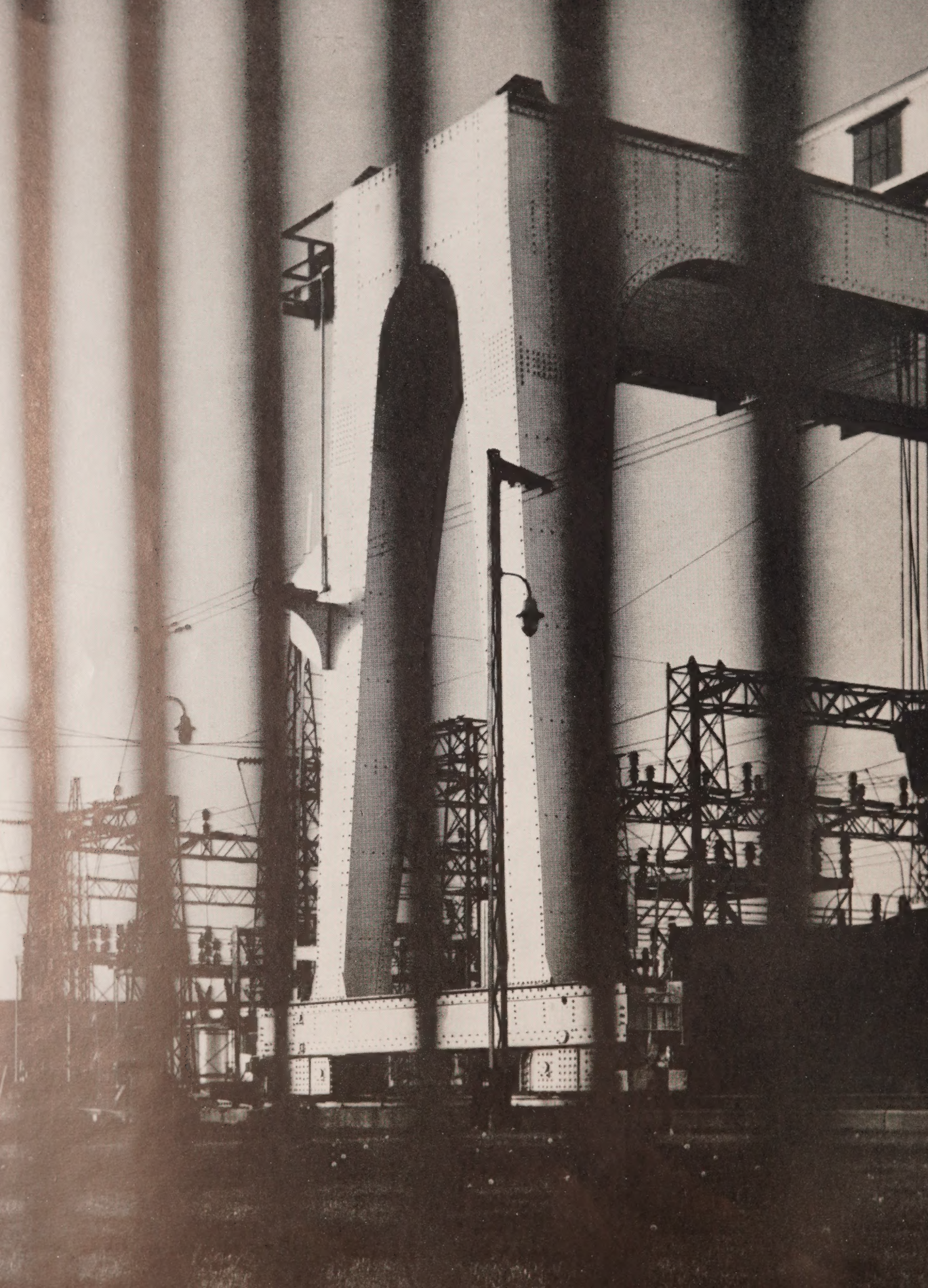
July 1942

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We Must Not Fail

THERE is no ceiling on the price of victory or on the cost of defeat.

We must face facts today—not tomorrow—for there is so much to do and so little time in which to do it.

We in Canada have not yet seen our skies darkened by the grim, ominous shadows of enemy planes. We have not yet heard the mournful, menacing whine of death-dealing explosives hurtling from the clouds. We have not yet seen our homes blasted and gouged into shapeless shambles. We have not stood with smarting eyes and thumping hearts, peering through a sombre screen of pungent smoke and choking dust into the awful horror and tragedy below some twisted ruins.

We in Canada have not had our hearts torn by the agonizing loss of homes and loved ones at one stunning blow. We have not been driven into that emotional frenzy which can make a peace-loving nation fighting mad.

There are millions of people in war-charred nations of Europe today who know that feeling and who still fight on as best they can. Even their children, who should only be "playing soldiers", are now shooting to kill. That is what the Nazis' "New Order" has brought to once-fair countries in Europe.

In Canada, the stark, grim intimacy of war is still unknown. Canadian skies are still smiling and clear. Of an evening, Canadians still water their lawns and tend their flowers. Blood has not yet stained our soil.

* * *

Only by taking the lessons of a conquered but defiant Europe to heart can Canadians serving on the home front become animated with that spirit which will enable Canada to throw the full weight of her ascending power into this struggle for the preservation of decency and justice. For such a cause the greatest personal sacrifice and hardship are the least we can offer. We on the home front must not flag or fail. To the very limit of our material and spiritual re-

sources, we must back our fighting forces and our allies.

* * *

Recently in the Canadian House of Commons, Hon. J. L. Ilsley, Minister of Finance, in bringing down the latest and greatest war budget in Canada's history, declared in part.

"Current savings must be increased greatly if those of us who are not in the armed forces are to demonstrate that as a democracy, we are capable of meeting the stern tests of war as we expect those who dare physical destruction to meet far sterner tests.

"Will this mean a reduction in our standard of living? Certainly. The war will not be won by disputing as to whether labour or agriculture or employer or employee should get a larger share of a swollen national income. It will be won, not alone by the valour of fighting forces and the skill of generals but by the willingness of the people at home to make necessary sacrifices—willingness to make those sacrifices first and not after other groups have made them."

So spoke Mr. Ilsley. His words will be carefully heeded by all thoughtful people throughout this vast Dominion.

* * *

Canadians can meet these "stern tests" only in the full knowledge that there is no ceiling on the price of victory, and that the cost of defeat means the loss not only of our material resources, but the suppression of all principles and ideals we hold dear.

During the last war, the spirit and exploits of Canadians contributed many glorious chapters to the pages of history. At Vimy Ridge poppies still rear their crimson heads to the glory of the remembering sunset.

From today, let each Canadian awaken to his or her individual responsibility. Our duty is clear.

We must not fail.

← An interesting photographic study of the three-motor gantry crane at one of the Hydro terminal stations is shown on page two. Used for lifting motors and heavy parts of condensers, the crane weighs 186,000 lbs. and can raise a part to a height of 35 feet and across a span of 54 feet. The lifting capacity is 80 tons. The perpendicular bars of the fence create an arresting photographic effect.

BIG EDDY



Cloud banks, rippling water, and trees combine to accentuate the beauty of the scenic surroundings of the main dam at Big Eddy. The inset shows a view of this dam from the downstream pool.

TWO years ago the site of the Big Eddy development was a rough, uncleared area of Muskoka bushland, dense with hardwood growth and evergreens. In the same location today stands a new monument to engineering progress, generating electric power for munition factories, shipbuilding yards, and military establishments in the great drive towards victory.

In July, 1940, Hydro engineers and construction forces moved in and pioneered a road to the proposed site of a new generating plant that would, when completed and in full operation, provide another 9,500 horsepower to meet anticipated peak demands in wartime. Actual work on the development itself, undertaken at an estimated cost of \$1,500,000 as a new source of supply for the Commission's Georgian Bay system, commenced in September of the same year. By October, 1941, work had progressed to the point where the first of the two units was ready to carry commercial load, and a month later the second unit was completed and ready for operation.

The Big Eddy plant possesses hydraulic characteristics similar to those of the Ragged Rapids development, and upon completion of supervisory installations the Big Eddy units will be operated from the control room at Ragged Rapids.

A construction force averaging 200 men was engaged for more than a year in carrying out the various stages of the work. Excavations for the canal and structures were made during the winter months, while concreting operations and installations were carried out during the summer.

Some interesting features were encountered in the early planning and surveying of the development. As the site selected was located in an Indian Reserve area, it was first necessary to conduct negotiations with the Indian Affairs Branch, Department of Mines and Resources, to purchase land for the structures and obtain the necessary flooding easements. Before materials could be brought in, proper

transportation facilities had to be provided. The existing road was improved and maintained, and a new road was cut through natural bush between Ragged Rapids and the site of the development, often over sections of difficult terrain in the nature of alternating rocky hills and swamp land. When the new road had been completed, arrangements were made for delivery of materials which were sent by rail to a point where a siding and unloading gantry had been installed to handle incoming shipments, and from there they were transported by truck.

Series of Rapids and Falls

An area of some 350 acres, adjoining the river upstream from the project, was cleared to the new water level contour. When rough bush and trees had been removed from the various sites, the adjoining area between the upper river and Big Eddy whirlpool was "park cleared", leaving only the larger and better trees standing.

From the standpoint of design, the Big Eddy development offers an interesting study. Between Ragged Rapids and the Big Eddy site there were several minor rapids, but the major part of the fall, concentrated for use in the project, occurred in a series of rapids and falls immediately above the large whirlpool, from which the development derives its name, where the course of the river swings sharply to the left. The main dam is placed just above the series of rapids, through which the river falls to reach the Big Eddy pool. A short distance above the dam a power canal has been excavated in earth for about 400 feet and then in rock for a further 350 feet to the powerhouse site, beyond which the water discharged from the turbines flows through a tailrace channel excavated in earth to enter the pool.

The main dam comprises a bulkhead section 51 feet in length, adjoining which is a gravity section with a spillway crest, at normal maximum elevation and 238 feet in length, followed by four sluiceways close to the left bank of the river. Beyond the sluiceways another spillway section, 78 feet in length, and a bulkhead section complete the closure to high ground. The sluiceways are four in number, 14 feet wide, and have their sills at elevation 665, that is, about 16 feet below headwater level. In ordinary operating procedure they will remain closed, as flood waters will be diverted to the Moon River above Ragged Rapids.

The power canal, as it leaves the river, is trapezoidal in section, having a bottom width of 80 feet and a depth of

10 feet. Toward the end of the earth section, the canal curves to the left and enters a rectangular rock cut 45 feet wide, in which the depth of water is 15 feet. From the end of the canal the channel widens as it approaches the face of the powerhouse, with short gravity sections of concrete flanking the channel to form the forebay. Two rock-fill dams, with concrete core walls, 330 and 390 feet long, and about 20 feet high, close the depressions to the right of the power canal. Material from the canal and powerhouse excavation was used for construction of these dams.

Powerhouse Has Two Units

The powerhouse contains two units, the turbines being of the fixed blade propeller type, rated at 4,950 horsepower, 200 r.p.m., under a head of 36 feet. They are set in reinforced concrete scroll cases, each drawing its water supply through two rectangular conduits 12 feet wide by 16 feet high and about 24 feet long, the whole forming an integral part of the powerhouse substructure. The turbines discharge through an elbow type draft tube to the tailrace.

The powerhouse superstructure is of brick and extends over the headworks sufficiently to house the gate hoisting machinery. As already stated, the station is designed for supervisory control from the Ragged Rapids plant, and space has been provided to house the necessary equipment for that purpose.

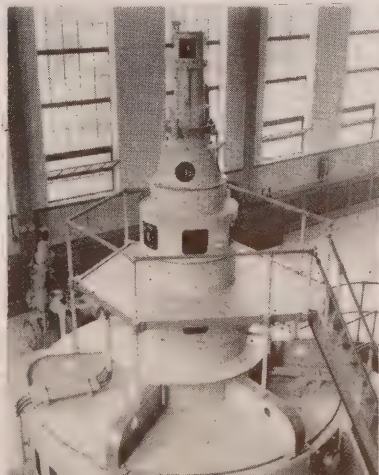
All engineering features of the Big Eddy generating plant were designed by engineers of the Commission's hydraulic and electrical engineering departments, under the direction of Otto Holden, chief hydraulic engineer, and A. H. Hull, electrical engineer, respectively, who also supervised the actual installations and erection. Field engineering was under the supervision of H. A. Johnston, resident engineer, while construction work was carried out by the Commission's construction department, under head office supervision of Dave Forgan and Gordon Mitchell and field superintendence of T. A. Barnett and E. R. Knowlton. An interesting sidelight is that a number of Indians living on the Gibson Reserve, where the development is located, were employed by the Commission to carry out bush cutting, clearing work and other duties.

Big Eddy has now taken its place alongside Hydro's other generating plants throughout the Province to produce electric power speedily and efficiently in the furtherance of the Dominion's accelerated war effort.

A view of the Big Eddy main dam, showing four of the sluiceways.



Generators like this, but without Kaplan units, are in use at Big Eddy.



This illustration shows the switchboard at Hydro's Big Eddy plant.



A transformer bank at Big Eddy where 9,500 horsepower is developed.



Appliance Hospital



This is a typical scene of the busy repair section of the Toronto Hydro-Electric System. "Mrs. Toronto" brings in a faulty appliance requiring repairs.

ELECTRICAL appliances of every size and description stream into the repair department of the Toronto Hydro-Electric System. Whether it be an egg cooker or a bake oven, it makes little difference to the skilled repair men who render "first aid" to damaged pieces of equipment in the system's busy repair shop on Carlton Street.

Organized on a small scale in 1912, this department has kept pace with the rapidly expanding frontiers of the electrical industry, and today it is fully equipped to handle the thousands of repair jobs necessary each year to keep Mr. and Mrs. Toronto's appliances operating at maximum efficiency.

"Inside" and "Outside" Jobs

Since the outbreak of the present war, with the attendant scarcity of vital materials and articles of household use, the average domestic consumer is giving very careful attention to electrical equipment and trying to make it last as long as possible. Even old toasters and irons that have rested and rusted on the kitchen shelf for years are now being taken down and examined tenderly in the hope that they can be used again. The trend of the times is reflected in the sharp upswing in the number and variety of articles brought into the Hydro repair shop every day.

The department effects repairs to all types of domestic appliances and commercial water heating equipment, but does not handle jobs where radios, blower motors or oil-burning equipment are involved, as these would require the installation of special apparatus.

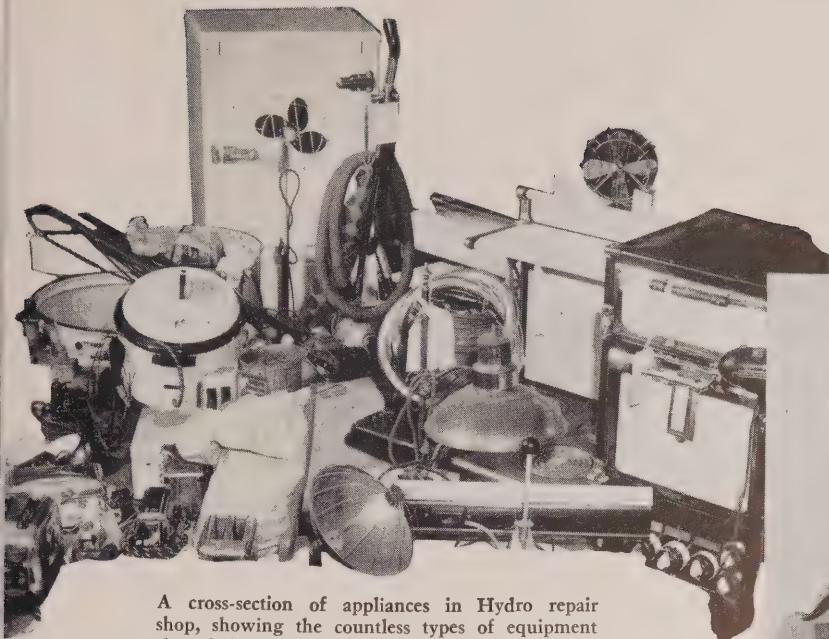
The majority of small articles needing repair are carried into the Hydro shop by householders, but the depart-

ment also receives many telephone calls, particularly in cases where the equipment to be repaired is a washing machine, an electric range or a vacuum cleaner. For outside repairs the department operates a fleet of five specially equipped trucks, carrying a full stock of repair parts. A striking feature of the system is that almost 70 per cent of repair jobs are done within 24 hours, and in normal times the figure has reached 85 per cent. An average of 80 to 90 calls represents a typical day's turnover, with the peak volume occurring during the months of December and January. Many jobs are sent in from out of town, even from other provinces, and so efficient is the system of carrying out repairs to damaged appliances that jobbers, manufacturers' representatives and public utilities are making use of the Hydro shop's facilities where formerly they did their own repairs.

Repair jobs are classified under two main headings, "inside" and "outside" jobs. The former are those done in the Hydro shop by a staff of three experienced repair men, while the designation "outside" means that repairs are made at the homes of customers. At any time of the day one can find an intriguing variety of articles in the Hydro shop awaiting repairs—electric irons, percolators, heaters, curling irons, electric shavers, clocks, vacuum cleaners, and automatic toasters, to name only a few. Of all types of appliances brought in for repair, automatic toasters dominate the field in number and variety. It is estimated that there is usually \$400 to \$500 worth of equipment in for repairs at a given time.

Must Turn in Old Part

To cite a typical case, a customer brings an appliance to the Hydro shop, leaves it at a special counter along with instructions as to what repairs are desired, and is given an idea of the cost of the work. In cases where repair parts may have to be ordered from the manufacturer, and the cost cannot be readily determined, the department tele-



A cross-section of appliances in Hydro repair shop, showing the countless types of equipment that daily pass through the hands of the "first aid" experts.

phones the customer later and quotes a price before going ahead with the work. One particular rule must be observed in wartime when dealing with the manufacturer. If the Hydro shop needs a replacement part, it must turn in the old part before it can obtain a new one.

At times the department is confronted with unique and often amusing situations, requiring considerable ingenuity on the part of the repair men. Appliances have been brought in so badly rusted that their make could not be recognized, and it has been necessary to improvise parts to fit them. Another condition created by the war is that refugees coming into Canada bring with them appliances of foreign design and manufacture for which it is almost impossible to obtain repair parts, but fortunately the resourcefulness of the repair department has managed to cope with such cases in a satisfactory manner.

Although the policy of "first come, first served" is observed in making repairs, conditions do arise where it is expedient that a certain repair job receive priority over those ahead of it. Just recently a young father rushed into the repair shop with an electric heater. An infant had been born at his home that morning and the excited parent, doing everything possible to make the little guest comfortable, discovered to his dismay that the electric heater simply wouldn't work. The understanding Hydro staff assured him that he would be accommodated at once, before all others, and sent him away rejoicing.

Eight Men "Immunized"

The organization of the repair department truck staff is interesting. Many of the jobs they are called upon to handle are of an emergency nature; for instance, a restaurant may report that the tank for its water heater service is cold. Hot water must be made available quickly, and the Hydro truck staff has to put the equipment in working order at once. These repair men handle many calls in connection with the System and at times are required to visit quarantined premises. Eight of the Hydro men on the outside repair staff are immunized, and have special instructions on how to conduct themselves on quarantined premises. During the night as well as in the daytime, they may have to rush to a home where a person may be critically ill and where speedy electrical repairs

(Continued on next page)

A scene in the busy repair shop.



Curtain! Her electrical appliance has been restored to first-class condition. "Mrs. Toronto", eminently pleased, smiles and leaves the shop.



APPLIANCE HOSPITAL

(Continued from previous page)

may be a matter of extreme urgency. In the majority of cases, the outside repair staff carries out its work completely in the home, but at times it is necessary to bring a piece of equipment back to the repair shop for special fittings and overhaul.

The Hydro repair trucks are affected by new Government rulings, occasioned by rubber tire and gasoline shortages. They are not permitted to visit a district more than once a day, unless it is for an emergency call, and when this is the case they display a sign authorizing them to do so. After discussing with the Wartime Prices and Trade Board, the Hydro repair department has classified its repair calls in two groups, "emergency" and "routine".

Emergency Calls

The following are considered as emergency calls, for which a repair truck may make a return trip to a district: all calls on quarantined premises; a leaking tank causing property damage; an electric range where all the oven and surface elements are out; a refrigerator leaking gas or a refrigerator inoperative during hot weather in a home where there is an infant; rental water heater service in restaurants and hairdressing parlours where the tank is reported as being cold. Calls reporting the following trouble, however, are not classed as emergencies: a residential consumer reporting a cold rental water heater tank; an oven out; some of the surface burners on a range out.

This flourishing Hydro repair shop is playing an important role in the domestic life of Toronto, and its value

is increasing day by day. It is operated under the direction of A. W. J. Stewart, manager of the appliance department, and the actual work of the repair department is carried out under the supervision of H. M. Guscott.

ROSE AND PEONY SHOW



OLD-TIMERS who know their flora and fauna acclaim this year's Rose and Peony Show, sponsored by the Horticultural Section of the Ontario Hydro-Electric Club, as one of the finest on record.

Members of the head office staff literally thronged into the show in Room 1116 where they were greeted by a colourful profusion of fragrant blooms which were artistically displayed. The 161 entries represented bore testimony to the increased interest which wartime conditions have stimulated in gardening.

The Club's Consolidated War Services Fund will receive approximately \$28 realized on the draw tickets sold on twenty bouquets. T. C. James made the draw.

Prize winners: John Starke of the construction department led the field with 11 "firsts" and 3 "seconds"; T. C. James, 1 "first" and the special award for the best rose in the show; J. F. MacLaren, 1 "first" and 4 "seconds"; W. H. Pomeroy, 1 "first" and 2 "seconds"; G. G. Argo, 1 "first" and 1 "second"; H. E. Brandon, 2 "firsts" and 2 "seconds"; H. Wagner, 1 "first" and 1 "second"; O. H. Kleiser, 1 "first" and 2 "seconds"; A. B. Hayman, 1 "first" and 1 "second"; W. H. Carr, 1 "first"; H. A. Waddingham, 1 "first"; Miss E. M. Grader, 1 "first" and 1 "second"; Miss J. E. McIlrath, 1 "second"; A. H. Frampton, 1 "second"; Miss E. B. McKenzie, 1 "second"; S. Appleton, 1 "second"; P. T. Seibert, 1 "second"; A. W. S. Smith, 1 "second"; Miss Tessa MacPherson, 1 "first" and 1 "second"; J. P. Morgan, 1 "first"; Miss Edith Thomas, 1 "first"; Miss M. M. Joyce, 1 "second"; Miss Marjorie Petrie, 1 "second"; and R. C. Lane, 1 "second".

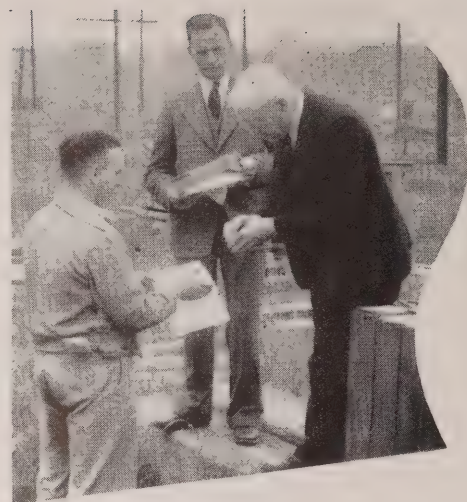
PETERBOROUGH UTILITY EMPLOYEES AID LOCAL FARMERS HARVEST CROPS

EMPLOYEES of the Peterborough Utilities Commission have been doing good work down on the farm during the past few weeks.

To date, nine members of the staff, with the approval of the Commission, have been assisting farmers for two or three days during the peak harvest period. Under a co-operative plan, the farmer provides transportation to his farm, pays 40 cents an hour and provides the necessary meals. The Commission takes care of such items as cost-of-living bonus and unemployment insurance, so that the individual employees do not lose anything as a result of their patriotic efforts.



Fred Armstrong, recipient of a bronze bar, faces C. W. Moat who made the presentations. Dave Forgan, construction engineer, stands on Mr. Moat's right.



This photograph shows Mr. Moat presenting a medal and certificate to William Addison, one of the Hydro employees who received awards.

For Meritorious Service

All recipients of Canadian Electric Association Resuscitation Medals have in their possession copper which was used in the construction of the original 17½-mile stretch of power line between St. Narcisse and Three Rivers in the winter of 1896-97. This copper is now stored in ingot form and is used exclusively for making these C.E.A. medals.

HOW two lives were saved by prompt action on the part of Hydro employees was recalled at the recent presentation at Niagara Falls of Canadian Electric Association Resuscitation medals and certificates to members of the Commission's construction staff.

One of the employees, Fred Armstrong, who had been awarded the C.E.A. medal in 1937, received a bronze bar in recognition of the resuscitation of Daniel Krass. The latter, it was revealed, had suffered shock and burns, and had been rendered unconscious when he inadvertently came in contact with a 12,000-volt line while working at the Alliance Paper Company substation at Merritton, Ontario. He was resuscitated after Armstrong had worked on him for fifteen minutes.

Similar injuries were suffered by Lorenzo Ruel who had been working on a steel structure 13 feet above the ground at the Atlas Steel transformer station, Welland, Ontario, when

he accidentally made contact with a conductor carrying 26,000 volts. Ruel was not breathing when seven Hydro employees took part in bringing about successful resuscitation. For this meritorious

service, awards were made to Leslie Catchpole, S. M. Richardson, Frank Williams, Burton Myers, John O'Connell, William Addison and Edward Ryan who is now in the army and whose medal has been forwarded to his commanding officer at Chatham, Ontario, where it will be presented to Private Ryan.

Dave Forgan, construction engineer, who was assisted by G. C. Thomas of the Construction department, paid high tribute to the men whose training had enabled them to save two lives. He stressed the importance of accident prevention and in observing the principles of safety in carrying out their work.

Mr. Forgan introduced C. W. Moat of the Employees Relations department, who made the presentations in the absence of Wills Maclachlan, department head.

Here are seven of the eight Hydro employees who received medals. They are, from left to right, Stewart Richardson, William Addison, Burton Myers, Frank Williams, John O'Connell, Fred Armstrong and Leslie Catchpole. Edward Ryan, the other recipient, is now in the army.





[Since the publication of the first issue of "Hydro News" last month, many readers have been kind enough to take the time to write and tell us about their reactions.

Letters received by Dr. Thomas H. Hogg, chairman and chief engineer; members of the Advisory Editorial Board and the editor contain many encouraging tributes which reflect a widespread and favourable acceptance. Needless to say, this thoughtful courtesy on the part of these readers is greatly appreciated by all who are associated with "Hydro News".

In the same cordial spirit which prompted the writing of these letters, we are taking the liberty of publishing a number of extracts in this column.—THE EDITOR.]

A Very Worthy Successor

"THE KING is dead, long live the King!" "Judging by the first issue, the *Hydro News* is going to be a very worthy successor to the *Hydro Bulletin* which has been a very welcome visitor to my office each month for the past ten years. I congratulate you upon the general excellence of your new magazine."—R. V. Slavin, general sales manager, Winnipeg Hydro Electric System.

Extends All Good Wishes

"JUST a line to congratulate the Commission on the first issue of *Hydro News* in the new style. With its well-written and copiously illustrated articles, it sets up a standard of interest which will, I am sure, appeal strongly to the larger circle of readers who will be receiving it. With all good wishes to the Commission and the Editorial Board for the continued success of the new venture."—E. M. Ashworth, general manager, Toronto Hydro-Electric System.

Promises "All-Out Support"

"I HAVE just received the first copy of the new *Hydro News*. This promises to be a most interesting and useful publication, and is a great improvement over its predecessor, the *Hydro Bulletin*. So far as London is concerned, you may rely on us for all-out support."—E. V. Buchanan, general manager, London Public Utilities Commission.

A Great Improvement

"THIS morning when I looked through my mail I found that nice booklet of yours, called *Hydro News*. I have gone through from cover to cover and it certainly is a great improvement over *The Bulletin* that we have enjoyed for so many years."—W. N. Elliott, vice-president and sales manager N. Slater Company, Limited, Hamilton.

"Really Outstanding"

"I HAVE been handed a copy of *Hydro News* in its new dress and I want to congratulate you on a very excellent job. Its styling and interesting layout of articles is, I think, really outstanding, and I am sure you have had a most satisfactory reaction."—R. M. Barbour manager, Saturday Night Press, Toronto.

"Bound To Be Successful"

"IN these strenuous days when everyone seems to be loaded up with those things which have to be done due to outside pressure, it is indeed refreshing to run into something new. The first issue of *Hydro News*, in its revised form, reached my desk yesterday, and I would like to take this opportunity of complimenting you on the make-up and contents of the new magazine. We have always regarded your publication with considerable interest, but in its new form, it certainly is an outstanding house organ, which I feel sure, is bound to be successful."—William Ross, manager, apparatus sales department, Canadian General Co. Ltd., Toronto.

Congratulations Extended

"I WANTED to drop you a line to say that I have just perused with more than usual interest the first issue of *Hydro News* which succeeds *The Bulletin*, and I would like to congratulate you on this new publication. I am sure it will receive the approval and support you seek for it, as so well set out in the words of introduction on page three."—H. F. Skey, manager, Bank of Montreal, Toronto.

Finds Title "More Appropriate"

"I WAS very much impressed by the new publication, first with the change of name from *The Bulletin* to *Hydro News* as the title is more appropriate and more aptly describes its contents. While *The Bulletin*, no doubt, was very much appreciated by Hydro employees and technical men, the *Hydro News* will be of considerable interest to all laymen."—F. H. Plant, chairman, Ottawa Hydro-Electric Commission.

Read First Issue With Interest

"WE wish to acknowledge receipt of the first issue of the new *Hydro News*. We have looked over this publication with a great deal of interest and wish to congratulate you upon the excellent editorial presentation of your material."—G. L. White, assistant business manager, Canadian Chemistry and Process Industries, Toronto.

(Continued on next page)



REPRODUCED above are some of the scenes witnessed on the lawn at the rear of the Head Office Administration Building recently upon the occasion of the presentation of a service wagon by the Ontario Hydro-Electric Club to the Salvation Army.

A plate on the side of the wagon bears the following inscription: "Great Britain. Presented by the Toronto area staff of The Hydro-Electric Power Commission of Ontario."

In handing over the keys to Col. George W. Peacock, general secretary of the Salvation Army, Dr. Thomas H. Hogg, chairman and chief engineer of the Commission,

Camera impressions of the presentation ceremony are as follows: No. 1—Miss Jean Hall and Miss Mildred Graves "try out" the wagon before it is driven away on the first lap of the journey overseas. Major Kenneth Barr obliges with a few driving hints. No. 2—A Section of the crowd. No. 3—Dr. Hogg hands over the keys to Col. Peacock. No. 4—Principals in the ceremony, from left to right: Major Robert Foster, public relations officer, Salvation Army; G. A. Honsberger, president, Ontario Hydro-Electric Club; Dr. Thomas H. Hogg, chairman and chief engineer, The Hydro-Electric Power Commission of Ontario; and Col. G. W. Peacock, general secretary of the Salvation Army in Canada.

paid tribute to the Army for the work they were doing in bringing comfort to the people and troops in Britain. He also spoke of the voluntary war service of the Ontario Hydro-Electric Club which comprises Commission employees. Purchase of the wagon, Dr. Hogg stated, had been made possible by a surplus realized on the Club's principal social events.

Speaking on behalf of the Salvation Army, Col. Peacock and Lt.-Col. William Dray, war services secretary, expressed appreciation for the gift.

"One of The Best"

"CONGRATULATIONS on one of the best house organs I have seen to date."—E. V. Rechnitzer, vice-president, MacLaren Advertising Co. Ltd., Toronto.

"Will Fill Long-Felt Want"

"CONGRATULATIONS on your new issue received this morning. We believe it will fill a long-felt want among Hydro bodies across the Province, for it has more of that much-desired personal angle to its articles."—K. H. Brown, manager-editor, The Tavistock Gazette, Tavistock.

Likes New Format

"PLEASE allow me to congratulate you upon the attractive new format and interesting contents of the re-vamped *Bulletin*. It is a really creditable achievement."—L. T. Barratt, assistant publicity manager, City of Winnipeg Hydro Electric System.

"Looks Like A Good Job"

"I HAVE just glanced through the *Hydro News* and I am taking it home to read it more fully. I want to compliment you on what looks like a good job to me."—J. B. Hay, president, Hay Stationery Co. Ltd., London.



"Salvage Scene" might best describe the Commission's yard at Bloor Street, Toronto (above), where all types of discarded materials and equipment from generating and transformer stations are to be found. These materials came from all parts of the Province to this central salvage clearing house.

Steadily increasing demands are being made upon the supplies of rehabilitated parts and equipment as a result of the growing scarcity of vital materials. This reproduction shows a section of the plant where many of these parts are stored and classified.



SALVAGE! There's magic in the word these days. The lowly scrap pile has taken on a new significance.

The reclamation of obsolete and abandoned materials is doing much to overcome the scarcity of metals and basic parts during wartime. It is sound practice from the standpoint of economy, and by relieving the strain on the nation's resources it contributes materially to the war effort.

A large user of equipment and materials in its manifold operations as a public utility, Hydro was quick to sense the potential value of a carefully-planned, well-organized system of assembling and reclaiming all types of old, dismantled or inadequate construction items.

Centralized Clearing House

The Commission's salvage organization, centered at its plant and yard on Bloor Street West, in Toronto, was established about a year before the outbreak of the present conflict. In the past six months it has received and distributed over \$180,000 worth of materials of all kinds, and this is a rate only slightly higher than that prevailing almost from the start of operations. Discarded materials and equipment from transmission lines, generating stations and transformer stations in every part of the Province find their way to this centralized clearing house, from the smallest piece of wire to the largest circuit-breakers and power transformers.

The salvage plant has at its disposal the facilities of the Commission's repair shops, both at Bloor Street and Strachan Avenue Service Buildings. On its staff are men experienced in salvage operations, repair work, overhauling, testing and evaluating. These salvage operations afford an opportunity for the employment of men who have been disabled in the field and whose condition makes it impossible for them to undertake heavy duties. In providing gainful employment for these employees, the salvage section extends its scope from the reclamation of materials to the reclamation of men, for they can perform certain salvage operations requiring no great physical vigour.

AGE



The extent and variety of the salvage field has been of great advantage to the Commission. For instance, the availability of particular materials in the salvage yard may aid in the completion of a project on schedule, when otherwise delays might be occasioned by slow deliveries of stock from manufacturers. During the last fiscal year, much of the equipment for the temporary power stations and the distribution systems installed for the construction of the Big Eddy and the Barrett Chute power developments was provided from salvage, and this year it has made available three construction power units for the Ogoki Diversion, as well as temporary facilities for the DeCew Falls development.

Equipment Rehabilitated

Some idea of the extent of this section's activities may be gained by noting that during the last fiscal year the turnover amounted to 1,132 incoming shipments and 1,387 outgoing shipments, valued at more than \$235,000 on a basis of 90 per cent or less of new prices.

When damaged or obsolete materials are sent in from the field, studies are made to determine how they can best be re-used. A non-standard size of copper conductor may be re-drawn and re-insulated and made available for further use. Transformers are given a thorough inspection, then cleaned, re-painted and tested. If re-winding is necessary, they may be sent out to the manufacturer. When returned, they are ready for installation whenever required. Lightning arresters, meters, suspension insulators, parallel groove clamps, connectors, insulator pins, switchgear—to name only a few of the many varieties of construction equipment—are likewise rehabilitated and made ready for duty on new fronts.

An interesting statistical summary of the past fiscal year's operations at the salvage stores shows 203 transformers re-conditioned, 421 re-wound; 40 tons of conductor re-conditioned, 25 tons re-drawn and re-insulated, 22½ tons cleaned and annealed for new applications; 1,012 lightning arresters repaired or rebuilt; 285 meters re-conditioned; 2,152 insulators re-conditioned and tested; and a number of oil-breakers, valued at over \$9,000, rebuilt and put in good working order.

(Continued on page 20)

Equipment and materials which cannot be used by the Commission for further service on the home front are put to work against Hitler in the form of munitions and mechanized equipment. This illustration shows a section of the plant where scrap is stored for Canada's war industries.

In this section of the plant are to be found all sizes and types of screws, bolts and nuts which have been re-threaded and re-finished. After having been carefully examined by Hydro inspectors they are stored away in compartments according to size and type.

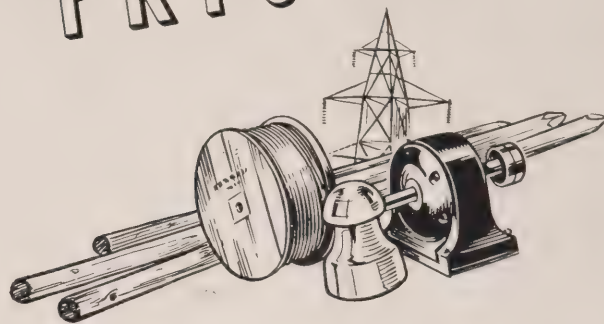


TALKING ABOUT

PRIORITIES

By **M. J. McHENRY**

CHIEF PRIORITIES OFFICER, H.E.P.C.



THE shifting of the Nation's economy from peacetime operation to war conditions cannot be made in one motion. War operations necessitate rapid and continuous changes in requirements. This is well illustrated



M. J. McHenry

in the case of priorities and the control of the distribution of materials. It is not possible to maintain priorities in a fixed condition for any period. New and increased demands for materials for munitions and war projects impose added restrictions on civilian uses.

Therefore, it must always be expected that added and more stringent regulations will be required from time to time as the production of war equipment becomes greater and greater.

* * *

United States Preference Ratings

In the last issue of this column, it was indicated that Operating Order P-46 would shortly become available to the electrical utilities of Canada. This is now an accomplished fact, but, since the order has been extended to Canada, certain changes and amendments have been made in its operation.

Probably most of the electrical utilities of Canada are now making use of Operating Order P-46 which extends certain preference ratings to them for the procurement of supplies for operation, maintenance and repairs. At the same time, many utilities are not aware of the revisions which were issued recently.

One of the important amendments deals with service extension requirements. Previously, minor extensions of system not involving a greater circuit length than 250 ft. were allowed, without permit. In the new amendment, such extensions are not allowed without permit, except where service is extended to supply consumers whose premises were wired, or the foundations of whose new structures, requiring service, were completed, prior to July 1, 1942. For all supply services to consumers whose properties were undertaken or started subsequent to July 1, 1942, it will be necessary to obtain permit before proceeding to supply such consumer.

Another amendment of considerable interest is the provision of a preference rating "A-1-c" to be used by the electric system for emergency breakdown repairs. This is only applicable in case of a breakdown of any piece of equipment requiring immediate and urgent repair parts, and is not to be used except in such cases.

The utility operator should keep in mind that the primary purpose of P-46 Preference Order is to provide facilities for obtaining equipment and material for operation, maintenance and repairs. It is not meant to be used for the procuring of any equipment for major capital extension. In the latter case, it will be necessary to use the application form PD-1A to obtain Preference Ratings for capital equipment:

Certificate for Each Service

Another point of interest is that a utility system or Commission operating more than one service, i.e., electric, water and gas, must obtain a certificate for each division. In other words, a separate P-46 certificate must be applied for and obtained for the electric system, the gas system, and the water system. The two basic ratings, A-2 and A-5 provided in the P-46 Order are applicable for production plant facilities and general distribution facilities, respectively. For an electric utility, the production plant will consist of the generating station, from the prime mover whether hydraulic or steam, and the electrical equipment, up to, and including, the step-up transformers. Supplies for this section of the system can be obtained under the A-2 rating.

For all other parts of the system, the A-5 rating applies. For all municipal Hydro systems, where no source of local generation exists, the A-5 rating, therefore, is applicable. In the case of water systems, the A-2 rating applies to pumping plant facilities only, and the A-5 to distribution.

Quarterly Returns Probable

It is probable that all electric systems operating under the P-46 Order will be required to make returns to the Government quarterly. Such returns will show the inventory of materials at the beginning of the quarter, the additions to such inventory, i.e., their purchases, and their withdrawals from stock, during the quarter. Instructions in this respect have not yet been issued, but undoubtedly will be forthcoming shortly.

Order No. P.O. 1 of the Priorities Officer at Ottawa has just come to hand. This order establishes an allocation classification system in Canada. Such a classification system is based on a similar classification recently established in the United States. It provides a means whereby the Governmental authorities may classify and distribute all materials as equitably as possible, first to war industries, then to essential industries and finally to civilian use. This allocation system became effective in Canada on July 10, 1942, and requires that all purchase orders issued from that time

forward must bear the proper classification symbols. Twenty-three classifications are set up, each with its own sub-classification. Insofar as the utilities are concerned, the main classification is 9.00, and for electrical utilities, the classification is specifically 9.10. In setting this up, it is preceded by a purchaser's symbol, which in the case of electric systems is "D.P." Therefore, on all orders purchased from July 10th forward, the municipal Hydro system should place on such orders the following designation, "Allocation Classification D.P. 9.10."

Undoubtedly, the various utilities will, in the course of a short time, receive copies of this Order No. P.O. 1, and will become well acquainted with the classification system.

Canadian Provisions

It has probably been noted by electric utility systems that the requirements of the P-46 Operating Order of the United States War Production Board do not conform to the directive letters issued by the Metals Controller of Canada. We understand that this is now being corrected, and that all utilities will shortly receive an order from the Metals Controller which will supersede all directive letters issued so far to electric service systems. It will make such changes as will closely line up with the requirements of the P-46 order. As the order is not yet issued, it is not possible for us to discuss it in this article. It is mentioned herein in order to acquaint those concerned with the fact that the Canadian requirements will be changed, and it is quite likely that additional restrictions over and above those already imposed by the Metals Controller will be contained in this order.

Surplus Stocks

During the past several months, it has become increasingly apparent that every attempt is being made to restrict the purchase of equipment and supplies to that required for essential purposes only. In the United States, the War Production Board has requested stock reports from all electric utilities. Such reports are in two parts, first, stock required for emergency repairs, maintenance and operation, and secondly, surplus, or all stock over and above such immediate operating requirements. The War Production Board has listed all such surplus stock, and is sending these catalogues to every utility system, asking that the utility draw on this general surplus stock for all purposes that it can, and thereby avoid the purchase and manufacture of new equipment. This is, in essence, the pooling of all surplus utility stocks of equipment and material.

Stock Pooling Advantageous

In the co-operative municipalities of Ontario, a similar pooling of stock should be very advantageous in the present highly restricted market. Some time ago, the Priorities Officer of The Hydro-Electric Power Commission, at the request of the Special Committee of the A.M.E.U., wrote to all municipalities, suggesting that they list their surplus stock of equipment and material, and that a copy of such list might be forwarded to the Priorities Officer, for central listing for the benefit of Hydro municipal systems. The Priorities Officer has no desire to make any use of these lists other than to provide a service for the municipalities, whereby they can readily ascertain whether material or equipment that they need can be procured from the surplus stock of some other system. Any municipal system desiring to take advantage of this service may do so. On request at any time, the Priorities Officer will advise where desired equipment may be obtained from other systems, if such equipment is available.

Efficient Service in Wartime Is Aim of Appliance Survey

ENLISTING the co-operation of consumers throughout the province, The Hydro-Electric Power Commission of Ontario has launched an electrical appliance survey which is designed to aid in providing the most economical and efficient service under wartime conditions.

The survey, which is now under way, is being made by means of cards which consumers receive along with their light bills, and which they are asked to mark and return to their local municipal Hydro offices.

On one side of the card is the following message:

"Dear Consumer: With the majority of Canada's metal resources being required for War materials, it is reasonable that less and less will be allotted for Domestic uses. In order that we may make the least possible demand on these resources, it is recommended that Electrical Appliances be repaired where possible, rather than replaced with new. In this way less of the materials vital to War Services will be diverted.

We ask your co-operation in order that we may assist the Dominion Government in making provisions for service parts to maintain in operation the Electrical Appliances in your home. Please complete the Questionnaire on the reverse side and return it to the Hydro Office when you pay your bill.

The War must be won and no effort is too small. Filling out this form will have no effect on the quality or cost of your service."

On the other side of the card are two columns listing electrical appliances. The consumer is asked to check off any appliances which he may own, and also indicate the total lamp wattage in use in his home.

DISCUSSES INDUSTRIAL LOADS

"GETTING The Best Results From Industrial Loads" formed the subject of an address delivered recently by Donald F. Martin, industrial engineer of The Hydro-Electric Power Commission of Ontario, before the Niagara Peninsula Meterman's Association at Niagara Falls.

Many industrial plants in the district were represented, and heard with a great deal of interest, methods which they could adopt to improve operating conditions in their own plants and, at the same time, assist in the conservation of electrical energy.

A limited number of reprints of this paper are available.

ELECTRICAL APPLIANCE SURVEY			
Check (✓) ELECTRICAL Appliances in Your Home			
APPLIANCES IN USE	No. in Home	APPLIANCES IN USE	No. in Home
Elec. Air Heater (Port.)		Elec. Radio	✓
" Clocks	✓	" Razor	✓
" Coffee Maker		" Range	
" Fans		" Rangelets	
" Reaster		" Refrigerator	✓
" Furnace Blower	✓	" Sewing Machine	✓
" Grate		" Sun Lamp	
" Grill-Sandwich		" Toaster	
" Hair Curler		" Vac., Floor Model	✓
" Hair Dryer		" Vac., Hand Model	✓
" Hot Plate		" Waffle Iron	
" Humidifier	✓	" Warming Pad	
" Iron		" Washer	
" Ironing Machine	✓	" Water Heater, Metered	✓
" Kettle		" Water Heater, Flat-Rate	✓
" Mixer	✓	" 2 or 3 Wires to your house	
" Oil Burner	✓	TOTAL LAMP WATTAGE IN HOME	
" Percolator			

PLEASE COMPLETE THIS FORM AND RETURN TO YOUR LOCAL HYDRO OFFICE.

412 P. 151 1-28-42 (OVER)

Shown above is the card which is being used to make up the survey.

The Price of Carelessness

HYDRO poles across Ontario's highways take \$25,000 worth of punishment from cars and trucks every year.

Power lines, which stride over the Province on these great stilts, are sometimes damaged and vital services interrupted because of irresponsible drivers.

Approximately five hundred poles yearly rock and reel, and sometimes crash, under the smashing impacts of speeding vehicles which swerve off the highways.

Causes and Consequences

An analysis of Hydro reports brings forth some very illuminating information as to the causes and consequences of these accidents, and shows how easily they could have been avoided by the exercise of a little more caution on the part of the travelling public and by adherence to fundamental traffic laws.

Dominating the list of contributing factors are the glaring sins of negligence and carelessness, including excessive speed, driving while intoxicated, falling asleep at the wheel, steering with one hand, violating the rules of the road and operating a vehicle that is not mechanically sound.

Deliberate laxity on the highway is almost suicidal. Even if the operator of a passenger car or a transport truck obeys all the commandments of good driving, he still has to contend with the ordinary hazards of icy roads, skidding, soft shoulders, and the blinding glare of oncoming

headlights. While passenger cars are more frequently involved in cases where Hydro poles are hit, yet trucks, because of their greater size and tonnage, cause considerably more damage.

In wartime an interruption to Hydro service can be extremely serious. If a war industry is affected, it means that production must be stopped until service is restored. This unnecessary idle period reduces the output of munitions and equipment for our armed forces, causes a delay in the firm's contract schedule, and may cause material spoilage costing the industry several thousands of dollars.

A Typical Accident

To illustrate just what can and does happen when a motor vehicle strikes and breaks a Hydro pole, let us cite a typical accident case and its far-reaching consequences:

"Pole number X struck by automobile at 10.30 p.m., causing interruption of 75 minutes to war industry in immediate vicinity."

We can read into that terse statement a series of incidents involving time delays, expense, inconvenience, possible injury to human life, and a definite hindrance to the war effort.

A Hydro repair crew and truck must be rushed to the scene of the accident, creating an unnecessary waste of gasoline and added wear on scarce rubber tires. The pole must

(Continued on page 21)



These illustrations tell a graphic story of the damage caused by cars and trucks driven by negligent drivers. Such accidents take a toll of approximately five hundred Hydro poles every year.

Hydro Marches On

IN MORE than 125 of the 296 urban Hydro utilities in Ontario the net debt in relation to total assets is less than 5 per cent, while there are now 109 Hydro utilities which have no debenture debt.

During the past decade, regular fulfilment of debt retirement schedules has contributed to a 50 per cent reduction in total municipal Hydro utility liabilities which are now less than \$25,000,000. At the same time, needed extensions have been more fully financed out of current revenues, and assets, which have continued to increase, now exceed \$176,000,000.

Thirty-fourth Annual Report

These are among many interesting facts chronicled in the Thirty-fourth Annual Report just released by The Hydro-Electric Power Commission of Ontario. Comprising 416 pages of informative data, charts and detailed statistics, the 1941 Report, like those of previous years, is factual in presentation and broad in scope. It will take its place as one of the important records in the Hydro archives for it clearly reveals how Ontario's great public ownership enterprise is applying itself, with unswerving determination and a high sense of responsibility, to the task of serving the best interests of the people in time of war as it did in the days of peace.

Of special interest to the 296 co-operating municipalities of the Province, which operate their own Hydro utilities are the consolidated balance sheets and operating reports. After a twenty-year period marked by widespread expansion of distribution facilities, the liabilities of local utilities in 1932 reached a maximum of \$53,000,000. At this time the assets totalled \$132,000,000, a ratio of about two-and-a-half to one. At the end of 1941 the consolidated liabilities had been reduced by local debt retirement schedules to less than \$25,000,000, with assets of \$176,000,000, a ratio of about seven to one. This remarkable improvement in financial status has been the result of steady progress, at times slowed down but never halted—not even by the severe depression of the early thirties.

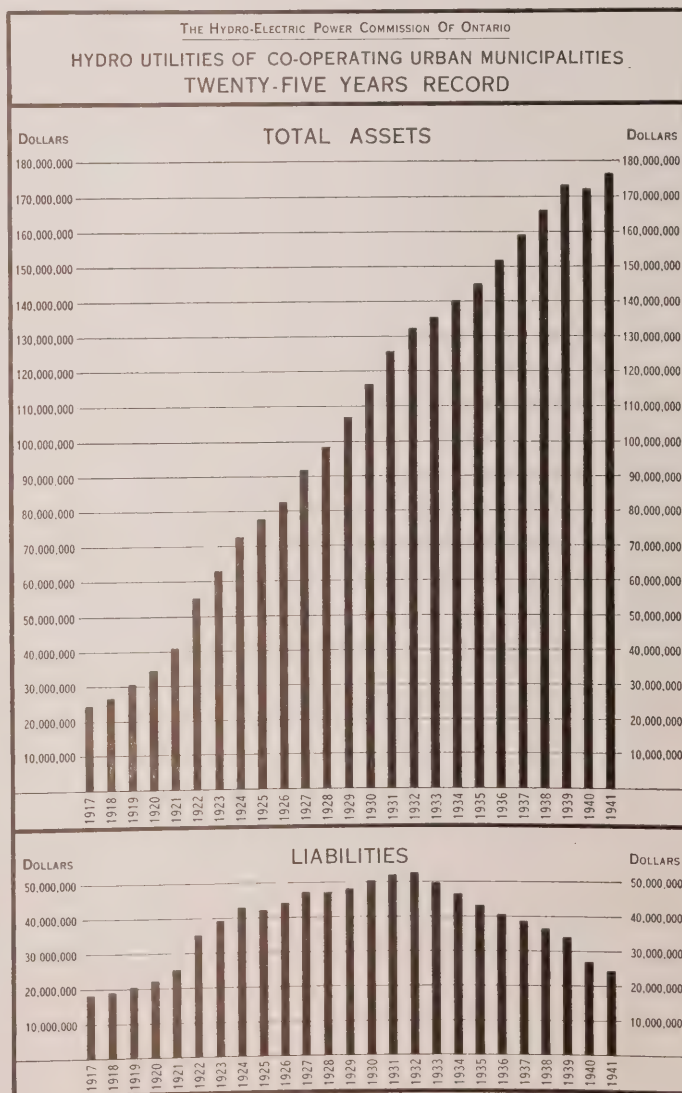
Power Shortage Looms

The assets of the local utilities include the equity acquired by the municipal utilities over the years by the provision for sinking fund on the capital investment made by the Commission on their behalf as part of the cost of power. This equity now aggregates more than \$52,000,000.

Dealing with the activities of the Commission itself, the chairman, Dr. Thomas H. Hogg, in his Introduction to the Report points out that during the winter of 1941-42 the Hydro was utilizing to the full all available capacity and had no immediate power reserves in hand, although it entered the war period with ample reserves. The Commission is adding, during 1942, some 129,000 horsepower additional capacity to its generating plants in Southern Ontario. Notwithstanding this, there will be a shortage of capacity in Southern Ontario which during the coming

winter may exceed 300,000 horsepower, and will not be less than 150,000 horsepower. This shortage, states the chairman, will have to be met by conservation and restrictions. Further, the scarcity of materials means that improvements not vital to the supply of adequate service to war industries must be postponed.

The Commission takes the broad view that in addition to making available the power supplies needed for the maximum war effort, it must ensure that Ontario's valuable electric power is utilized to the best advantage and must encourage munition plants to use electric power fully and in many new ways in order to speed the manufacture of war supplies. At the end of the year, the Commission was supplying about one-half million horsepower, or approximately 25 per cent of its total output for direct war production. In October 1941 the primary load of all systems for the first time exceeded 2,000,000 horsepower.



Around the Hydro Circuit

HON. WILLIAM L. HOUCK vice-chairman of The Hydro-Electric Power Commission of Ontario, was born in Buffalo, New York, coming to Canada in 1911. He has since resided at Niagara Falls, Ontario. Mr. Houck received his early education at Buffalo and later attended Cornell University, from which he graduated with the degree of Bachelor of Science (Agriculture).

Athletically inclined and a keen sports enthusiast, Mr. Houck's foremost recreational activities are golf, riding and fishing, and at one time he played semi-professional baseball.

Following his graduation the vice-chairman devoted himself to agriculture and for many years carried on the operation of his 1,000-acre Holstein farm at Chippawa, Ontario. (Reversing the spelling of his alma mater, Mr. Houck calls his farm "Llenroc").

Always vitally interested in governmental affairs, Mr. Houck entered public life actively in 1934, when he was elected to the Provincial Legislature as Member for Niagara Falls and was appointed to the Niagara Parks Commission. He is an ardent admirer of the scenic beauty of the great Niagara Cataract and had long been of the opinion that its natural resources could be enhanced so as to provide a new degree of prosperity for the tourist trade at the border. The beautification programme carried out by the Parks Commission made this dream a reality.

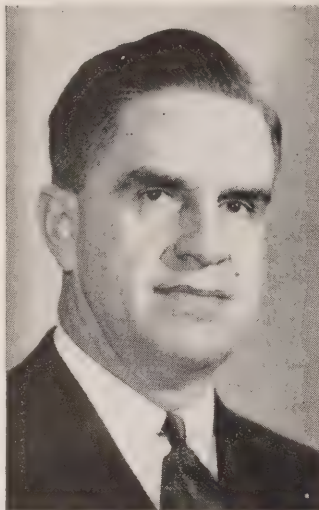
In the provincial election of 1937, Mr. Houck was returned to office. His enterprise and all-round ability found recognition in his appointment as a Cabinet Minister and as vice-chairman of the Hydro-Electric Power Commission.

Like his colleagues on the Commission, Mr. Houck's chief interest is in marshalling all the power resources of the Province to meet the urgent and growing demands of Canada's rapidly accelerated war production schedules.

Because of the situation of his home city at the border line of Canada and the United States, Mr. Houck is a well-known and familiar figure on both sides of the boundary.

Mr. and Mrs. Houck have one daughter, Dorothy (Mrs. C. Boyd Slemon of Niagara Falls, Ontario), who is a graduate of O.A.C., Guelph.

Living within hearing distance of the roar of the great Falls where electric power is generated, "Hydro" is close to Mr. Houck whether at his desk in head office or in the backyard of his home.



Hon. W. L. Houck, B.Sc., M.L.A.



J. Albert Smith, M.L.A.

HYDRO Commissioner J. Albert Smith, M.L.A., has since early childhood made his home in Kitchener, the birthplace of Hydro. He received his education in Kitchener public schools and the Kitchener-Waterloo Collegiate Institute, and during his student days was an outstanding athlete, participating in various sports and managing Collegiate teams.

After graduation, Mr. Smith entered business and for a number of years was associated with concerns in the Kitchener district and

in Toronto. He donned the mantle of municipal office in 1926, and for eight consecutive years thereafter served as Alderman on the Kitchener City Council. In 1935, he became Mayor of Kitchener for a first term by acclamation, an event unprecedented in the city's history, and he was returned to the office by acclamation in 1936 and 1937. Although one of the youngest mayors in the Province, Mr. Smith was for a year and a half president of the Ontario Mayors' Association, a title of eminence among municipal heads. He had previously served the same organization as secretary, and also held office in the Dominion Mayors' Association.

An enthusiastic gardener and nature-lover, and a respected authority on horticultural matters, Mr. Smith was president of the Kitchener Horticultural Society from 1926 to 1934. During his tenure of office, he played an active part in the development of the imposing rock and floral gardens which are now a landmark of civic pride at the eastern approach to the city. Provincial recognition of his contribution to horticulture came in 1931, when he was elected president of the Ontario Horticultural Association, which had at that time a membership of 80,000.

It is rather unique that one who, as a boy, saw the great Hydro public ownership enterprise being created in his own community, should in later years become so intimately linked with the administration of its affairs. From 1935 to 1937, Mr. Smith was vice-president of the O.M.E.A., and, during his term of service, was in close touch with Hydro municipalities and their problems throughout the Province. Upon his election to the Ontario Legislature in 1937, as Member for Waterloo North, Mr. Smith was appointed Hydro Commissioner, a position he has occupied since that time.

Mr. and Mrs. Smith have two daughters and one son. Elaine, the elder daughter, is at present attending the University of Toronto, while Phyllis and Louis are students at the Kitchener-Waterloo Collegiate Institute.

A vigorous booster for Hydro, Kitchener, and horticulture, and a man with a great variety of interest, Mr. Smith regards the restful pursuit of gardening as the ideal leisure activity.

AT THE HYDRO HELM

MEN who are entrusted with the high responsibility of serving the people of the province on The Hydro-Electric Power Commission of Ontario are appointed by the Lieutenant-Governor in Council.

Under the provisions of the Power Commission Act of Ontario, two of the Commissioners may be members, and one must be a member, of the Executive Council of Ontario.

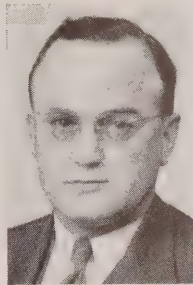
The men, who are at present associated with Dr. Thomas H. Hogg, chairman and chief engineer, at the Hydro helm are Hon. W. L. Houck, B.Sc., M.L.A., vice-chairman, and J. Albert Smith, Commissioner. Brief biographical sketches and illustrations of these prominent public men are featured in this issue.

CHAIRMAN of the Board, Port Arthur Public Utilities Commission, **Dr. Manfred Paul Bengier** is a well-known figure in the business life of the northern city.

Following his public and high school education in Port Arthur, where he was born in 1896, Dr. Bengier entered the Faculty of Medicine, McGill University, in 1914. He enlisted upon the outbreak of the Great War and, the following year, went overseas with a McGill Hospital Unit, later transferring to No. 7 Battery, McGill C.G.A. Returning to Canada in 1918, illness prevented continuance of his studies for some time. In 1921 he enrolled in the Faculty of Dentistry, University of Toronto, graduating in 1925. He has made his home in Port Arthur since his return there in 1926, the year of his marriage.

An active war veteran, Dr. Bengier was president of the Port Arthur Branch of the Canadian Legion in 1935 and 1936, and for the past six years has been chairman of the Legion's employment committee. During the recent recruiting drive for the Reserve Army, he served as chairman of the Civilian Committee which conducted a very successful campaign. Dr. Bengier acted for three years on the Port Arthur School Board, and since 1938 he has been a member of the Local Advisory Board of the Canadian National Institute for the Blind. He was selected this year to head the Board of the Public Utilities Commission, a body he has served faithfully since 1939.

(The doctor ranks fishing and a good argument as his most absorbing leisure pursuits).



Dr. M. P. Bengier

O.M.E.A. MEMBERS INVITED TO GEORGIAN BAY CONVENTION

ALL O.M.E.A. members and their friends are invited to attend the annual convention of the Georgian Bay Municipal Electric Association aboard the C.P.R. steamship Assiniboi on Friday, August 14.

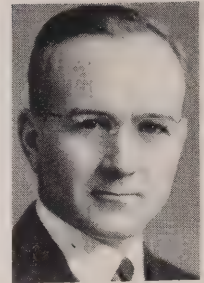
The boat, it is announced, will leave Port McNicoll at 1.30 p.m. and return to port at 10 p.m. The fare is \$1.25 plus tax, while the charge for a stateroom is \$2, and dinner will cost 75 cents. The program includes dancing after dinner.

W. ROSS STRIKE, enterprising president of the Eastern Ontario Municipal Electrical Association, was born in Prince Edward County in 1895. Raised in the august atmosphere of the parsonage, he was educated in public and high schools in Eastern Ontario, where his father occupied a number of town pulpits.

His vocational choice was the legal profession, and he was articulated in law in 1914. The outbreak of war halted his career temporarily, and the following year he enlisted for active service. He was wounded twice during his three years in France and was awarded the Medaille Militaire, French military tribute, at Vimy Ridge. Resuming his legal studies after the war, Mr. Strike graduated from Osgoode Hall in the Veterans' Class of 1920, practising law with Tilley and Company in Toronto and later at Perth and Bowmanville.

As Mayor of Bowmanville, 1933-1937 inclusive, and a member of the Bowmanville Public Utilities Commission for the past nine years, he has been in close touch with Hydro affairs, and since 1935 has been President of the Eastern Ontario Municipal Electrical Association.

Athletically inclined, Mr. Strike modestly refrains from magnifying his attainments, but confides that just at the moment he is trying desperately to sink 2-foot putts.



W. Ross Strike

THE old saying, "Variety is the spice of life", finds expression in the person of **Keith C. MacLeod**, chairman of the Stamford Public Utilities Commission.

Born at Stamford in 1886, Mr. MacLeod's versatility has provided him with a wide range of pursuits—business man, soldier, fire chief, farmer, educationalist, and public servant. In each of these fields his energy and enthusiasm have brought unique success.

Mr. MacLeod turned first to farming after his graduation from Stamford public and high schools, and his 180-acre farm, which he still operates with the assistance of his son, features Jersey cattle and Yorkshire hogs. He went overseas with the 12th C.G.A. during the Great War, and in the intervening years has been a member of the Canadian Corps.

One of the organizers of the Stamford Fire Department, his efficiency as a "smoke-eater" was recognized when he was made fire chief for six years. He is a member of the Public School Board, and a director of the Rural Section, Ontario Educational Association.

Mr. MacLeod has been a keen student of Hydro affairs, and for the past twelve years has been a member of the Stamford P.U.C., having been chairman for the past six. He is vice-president of District No. 5, O.M.E.A.

In his "spare time", Mr. MacLeod operates a service station at Stamford Centre.



Keith C. MacLeod

SAYS POST CARD METER READING DEVELOPED BY LATE J. J. HEEG

IN a letter to Hydro News, Stewart Watt, secretary of the Board of Light and Heat Commissioners of Guelph, says:

"We notice in your June publication on page 16 that Lionel D. Pengelly has been given credit for the development of the post card system of meter reading.

"We wish to bring to your attention that the late John J. Heeg instituted the system of meter reading by post card in the city of Guelph approximately twenty years ago. This system has continuously been in use since then, although at present instead of using a post card the consumer marks the meter indexes on the reverse side of the cashier's stub.

"While our present system would not work on the rural department (because of quarterly billing, while our billing is monthly) we think the post card system will prove highly satisfactory and the rural department is to be commended on its adoption.

"We hold the kindest regards for Mr. Pengelly, but we think 'credit should be given where credit is due.'"

POWER

*Tall towers of steel against the sky,
Clean and true to the tiniest bolts;
Whistling wires in the wind hung high
With a load of two hundred thousand volts;
These are the nerves, you said to me,
That carry the power for victory.*

*But I have seen small figures sway
On a scaffold of steel or a shuddering pole
While the lightning slashed the clouds away
And the thunder was louder than war-drum's
roll;
It is from their hands, it seems to me,
We get the power for victory.*

*With climbers and pliers and bit and wrench
Or pen and blueprint,—on dizzying tower
Or industry's floor, at the desk or bench,—
We all are part of the chain of power
Which speeds the flow of planes and guns
That'll sink the Japs and lick the Huns.*

TRUE DAVIDSON.

(In submitting this poem Miss Davidson, who is Deputy Secretary of the Streetsville Public Utilities Commission, says it was inspired by the front cover of the June issue of "Hydro News".—Editor.)

SALVAGE

(Continued from page 13)

Here is an instance of the value of these salvage operations. A requisition was received by the salvage section for 36 street lighting brackets. A check-up showed there were none in stock. By using old bracket fixtures discarded from

"ERNIE" FLOWERS RETIRES FROM ELECTRICAL FIELD

ON April 30th of this year, "Ernie" Flowers, Engineer of Stations (Operation Division), Toronto Hydro-Electric System, retired from the electrical field. Born in Toronto in 1872, and educated in Toronto public and technical schools, Ernie became associated with the old Edison Company in the Spring of 1891.

Fascinated by the possibilities of electric power, Ernie decided to make a career of it, and in the years that followed he was successively engaged by the Toronto Incandescent Light Company, Ball Electric Company, Toronto Construction Company, Richelieu Navigation Company, General Electric Company, Great Northwest Telegraph Company, and the Toronto Niagara Power Company. In 1909 he came to the present Toronto Hydro-Electric System and for thirty-three years rendered loyal and efficient service with that utility.

As he retires to a well-earned life of leisure, Ernie takes with him the best wishes of the electrical industry.

the D. P. and T. district, with lighting reflectors from old construction stores and porcelain sockets and wire from Abitibi salvage, the required brackets were assembled and painted, thus providing brackets satisfactory for the job. They were almost as good as new and effected a saving to the Commission of over two hundred dollars.

Such reports indicate the usefulness of a centralized salvage system and the resourcefulness of the staff in assembling reclaimed parts to meet the needs of the moment.

In the storage rooms of the salvage section are many shelves and bins filled with every conceivable piece of reclaimed material, from tiny nuts and bolts to heavy pole line hardware. Out in the storage yards are long rows of transformers, cable reels and miscellaneous heavy stock. Dismantled equipment reaches this melting pot from every system in the Province.

War Industries Benefit

Materials for emergency repairs and temporary installations can be assembled quickly. When construction schedules must be adhered to and power turned on at a given time, and it appears that the delivery of materials from the manufacturer is going to be late and cause delays, the salvage department can step in often as a "pinch hitter".

It is significant that the value of this department's work is increasing month by month. The growing scarcity of vital materials makes many demands on the salvage stores. Its handling and sale of scrap materials is bringing good financial returns because of its centralization, and, most important at present, is quickly turning needed metals to the foundries and mills for war products. Running records are kept of the great volume of stock passing through its hands day by day. During 1941 the amount which the Commission was in pocket through the use of rehabilitated parts and equipment compared to what similar new equipment would have cost—had this been obtainable—was over \$110,000.

Salvage work has unlimited possibilities. It is helping Hydro at present to observe the time-honoured command of the theatre, "The show must go on!"



(Continued from page 10)

"Very Attractive"

"CONGRATULATIONS on the change in your publication. It is very attractive and I am sure it will be most popular."—Herbert Cottingham, chairman, Manitoba Power Commission.

"A Nice Size and Well Printed"

"I WISH to take this opportunity of congratulating Hydro on the new publication. *Hydro News* is a nice size, well-printed on good paper and has some very excellent articles. Keep it up."—J. C. Barr, Sarnia.

Extends Congratulations

"I WOULD LIKE to take this opportunity of extending to you and your colleagues my hearty congratulations on the first issue of *Hydro News*. In my opinion, it is a great improvement and no doubt will become a medium through which we will all become better acquainted."—A. G. Jennings, chairman, East York Hydro-Electric Commission.

Will Be "More Widely Read"

"THE *Hydro News*, if maintained on the same standard as the first issue, will not only maintain the prestige enjoyed by its predecessor, *The Bulletin*, but will, I am certain, be more widely read by the non-technical members who make up the bulk of our great Hydro family."—R. B. Chandler, Manager, Public Utilities Commission, Port Arthur.

Tribute From North Bay

"THE new type of publication, we are sure, will be enjoyed by all those receiving it, and will doubtless do much in bringing to its readers a deeper appreciation of the efforts made by our provincial utility in its endeavour to constantly supply power at ever-diminishing costs."—A. W. H. Taber, Manager, The Hydro-Electric Commission, North Bay.

"Big Improvement"

"MAY I be among the many who will be congratulating you on the first issue of the *Hydro News*. This looks like a big improvement over the old *Bulletin*, which has served a very useful purpose, over a long period of years."—W. R. McCaffrey, secretary, Canadian Engineering Standards Association, Ottawa.

SAILORS RECEIVE ARTICLES KNITTED BY HYDRO LADIES

BRITISH sailors aboard a large, Canadian-built minesweeper, now on Atlantic patrol, are using many articles which were knitted by members of the Ladies' Auxiliary of the Ontario Hydro-Electric Club.

Acknowledgment of these articles has been received by Miss Jane McDowall, general convener of the auxiliary, from the British Minesweepers' Auxiliary.

For the information of the ladies who are knitting for sailors, Miss McDowall directs attention to the following announcement from the Canadian Red Cross Society:

"The making of stockings for seamen has been changed from the sea-boot type to seamen's ribbed stockings, preferably the long ones. This change is being effected because reports have been received that the sailors prefer the latter type, as they stay up more satisfactorily—'stick to their moorings'—so to speak. In addition, these ribbed stockings do not require quite so much wool as the seaboot ones."

Another acknowledgment received by Miss McDowall comes from the National Children's Home and Orphanage, London, England, for clothes made by the Sewing Section.

THE PRICE OF CARELESSNESS

(Continued from page 16)

be replaced, crossarm, insulators and hardware installed, wires restrung, and a great deal of incidental work performed to put the line in a safe operating condition. Extra demands are put on essential materials, labour and repair facilities. The car that struck the pole may be smashed or badly damaged, requiring the services of a tow truck. Possibly the occupants of the car are injured, requiring medical attention and later involving absence from work. Meanwhile, hundreds of employees in that war industry are standing idly by, unable to operate their machines. Assembly lines are stopped, routine broken, and precious time lost in getting the tools of victory to the front line. And all because the driver of that vehicle refused to observe the few, simple rules of the road!

Scores of People Affected

Accidents of this type involve an expense of about \$50 per pole struck, and cost Hydro approximately \$25,000 annually. The price of carelessness is high. Apart from war industries and large commercial concerns being affected, accidents often cause inconvenience to hundreds of domestic consumers. On many occasions, a pole and its twisted fastenings are left hanging in mid-air, with live wires dangling dangerously near passing pedestrians and motorists.

The majority of reports in Hydro files show the operator of the vehicle as the party responsible for the accident. As well as having to bear the expense of his personal injuries and possibly those of other passengers, to say nothing of repair bills for his car or truck, he is also liable for all costs necessary in restoring the damaged Hydro property. In a number of cases, litigation follows and brings on added expense. Whenever a pole is struck, a lengthy series of events is set up, affecting scores of people—the travellers, the Hydro staff, insurance companies, police, medical attendants, and, in some cases, witnesses.

Behind the wheel, just as in the factory, on the farm, and in the battle line, there is urgent need for keen eyes, steady hands and clear heads. Carelessness on the highway helps the enemy's war effort. Hydro poles are on active service 24 hours of the day, doing their part in the race of production.

Conservation Necessary To Meet Power Shortage

Backed by Hydro's 2,000,000 horsepower, more than half of Canada's ever-growing war production comes from Ontario, according to the monthly summary report just released by The Hydro-Electric Power Commission of Ontario.

The summary shows that during the month of May the total primary load in all four Hydro systems and the Northern Ontario Properties, based on the maximum 20-minute peak horsepower load, advanced 22 per cent. over May, 1941, while primary and secondary loads combined recorded a total increase of approximately 12 per cent.

The time is not far off when it will be necessary to conserve energy just as rubber and gasoline are being conserved to take care of serious shortages. It is, therefore, desirable that the public should have as clear a conception as possible of the problems confronting the Commission in meeting the mounting demands of war industries.

The report also refers to the significance of primary power, pointing out that it is of two types—firm and interruptible power. The former, is commercially continuous 24 hours a day and 365 days a year, the contracts making no provision for interruption except for repairs, during emergencies, or as a result of, acts of God. This is equally true of interruptible power except that the contracts make provisions which enable the Commission to interrupt deliveries during certain months of the year, for a limited total period during any month, and often during certain specified hours of the day.

"Secondary" or "at-will" power is only supplied when not required for the Commission's primary power customers.

Highlights of the latest summary reveal that the Niagara system recorded the greatest increase during the month of May with a load of 1,607,909 horsepower as compared with 1,255,496 horsepower for the corresponding month last year, representing an advance of 28 per cent.

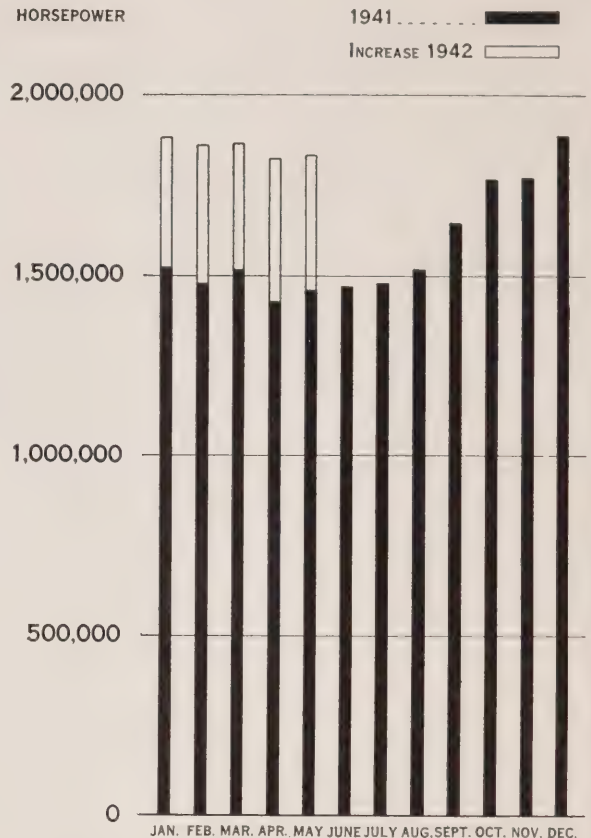
A tabulation of the combined primary and secondary power loads for the respective months follows:

PRIMARY AND SECONDARY LOADS

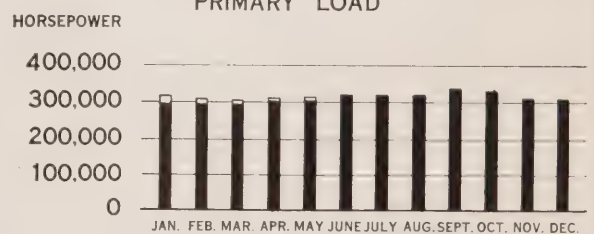
	May, 1942 Maximum 20-Min. Peak H.P.	May, 1941 Peak H.P.	Increase Per Cent.
Niagara system	1,685,121	1,485,925	+13.4
Eastern Ontario system	180,696	161,166	+12.1
Georgian Bay system	45,224	41,305	+ 9.5
Thunder Bay system	131,448	106,582	+23.3
Northern Ontario Properties ..	258,010	260,126	— .8
Total	2,300,499	2,055,104	+11.9

The charts in the next column show the primary load month by month for the combined Southern Ontario Systems and also for the combined Northern Ontario Properties and Thunder Bay System. The increase each month is indicated by the white blocks.

SOUTHERN ONTARIO SYSTEMS PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



PRIMARY LOADS

Area served by	Maximum 20-Minute Peak H.P. May 1942	May 1941	Per Cent Increase
Niagara System	1,607,909	1,255,496	+28.1
Georgian Bay System	45,224	41,305	+ 9.5
Eastern Ontario System	180,696	160,938	+12.3
Thunder Bay System	107,654	101,072	+ 6.5
Northern Ontario Properties	204,391	200,608	+ 1.9
TOTAL	2,145,874	1,759,419	+22.0

MUNICIPAL LOADS, APRIL, 1942

NIAGARA SYSTEM			Popula-		Popula-			
25-Cycle			H.P.	tion	H.P.	tion		
	H.P.	Popula-						
		tion						
			Erie Beach -----	10	21	Palmerston -----	581	1,400
Acton -----	1,558	1,903	Essex -----	589	1,886	Paris -----	1,705	4,604
Agincourt -----	190	P.V.	Etobicoke Twp. -----	6,842	V.A.	Parkhill -----	180	1,029
Ailsa Craig -----	122	487	Exeter -----	593	1,654	Petrolia -----	1,151	2,768
Alvinston -----	97	649	Fergus -----	1,395	2,759	Plattsville -----	126	P.V.
Amherstburg -----	810	2,704	Fonthill -----	155	860	Point Edward -----	1,662	1,199
Ancaster Twp. -----	311	V.A.	Forest -----	508	1,562	Port Colborne -----	1,863	6,772
Arkona -----	61	403	Forest Hill -----	6,693	12,172	Port Credit -----	797	1,934
Aurora -----	1,266	2,821	Galt -----	11,381	14,584	Port Dalhousie -----	949	1,599
Aylmer -----	811	1,985	Georgetown -----	1,812	2,452	Port Dover -----	429	1,790
Ayr -----	214	760	Glencoe -----	201	763	Port Rowan -----	104	700
Baden -----	525	P.V.	Goderich -----	1,446	4,674	Port Stanley -----	533	824
Beachville -----	678	P.V.	Granton -----	74	P.V.	Preston -----	4,178	6,337
Beamsville -----	410	1,227	Grimsby -----	814	1,988	Princeton -----	133	P.V.
Belle River -----	162	836	Guelph -----	11,339	22,500	Queenston -----	138	P.V.
Blenheim -----	488	1,873	Hagersville -----	1,213	1,347	Richmond Hill -----	427	1,295
Blyth -----	117	662	Harrison -----	413	1,292	Ridgetown -----	508	1,986
Bolton -----	141	629	Harrow -----	510	1,092	Riverside -----	1,002	5,235
Bothwell -----	120	683	Hensall -----	172	686	Rockwood -----	117	P.V.
Brampton -----	2,947	5,702	Hespeler -----	2,858	2,938	Rodney -----	143	758
Brantford -----	19,652	30,947	Highgate -----	81	322	St. Clair Beach -----	97	138
Brantford Twp. -----	893	V.A.	Humberstone -----	498	2,831	St. George -----	148	P.V.
Bridgeport -----	131	P.V.	Ingersoll -----	3,114	5,186	St. Jacobs -----	265	P.V.
Brigden -----	81	P.V.	Jarvis -----	208	513	St. Marys -----	1,474	4,009
Brussels -----	145	784	Kingsville -----	526	2,453	St. Thomas -----	7,770	16,461
Burford -----	244	P.V.	Kitchener -----	26,182	33,281	Sarnia -----	10,509	17,979
Burgessville -----	46	P.V.	Lambeth -----	114	P.V.	Scarborough Twp. -----	3,831	V.A.
Burlington -----	1,514	3,925	LaSalle -----	235	907	Seaforth -----	685	1,782
Burlington Beach -----	422	1,474	Leamington -----	1,357	6,048	Simcoe -----	2,467	6,340
Caledonia -----	349	1,430	Listowel -----	1,360	2,984	Smithville -----	148	P.V.
Campbellville -----	28	P.V.	London -----	38,047	75,176	Springfield -----	64	382
Cayuga -----	123	700	London Twp. -----	449	V.A.	Stamford Twp. -----	2,593	8,275
Chatham -----	6,334	17,148	Long Branch -----	1,040	4,258	Stoney Creek -----	211	933
Chippawa -----	333	1,228	Lucan -----	183	643	Stouffville -----	268	1,198
Clifford -----	95	491	Lynden -----	114	P.V.	Stratford -----	7,276	17,163
Clinton -----	561	1,879	Markham -----	369	1,175	Strathroy -----	1,445	2,834
Comber -----	112	P.V.	Merlin -----	82	P.V.	Streetsville -----	238	701
Cottam -----	76	P.V.	Merritton -----	8,621	2,916	Sutton -----	224	949
Courtright -----	43	355	Milton -----	1,412	1,915	Swansea -----	2,953	6,606
Dashwood -----	90	P.V.	Milverton -----	306	994	Tavistock -----	633	1,080
Delaware -----	66	P.V.	Mimico -----	2,436	7,713	Tecumseh -----	349	2,331
Delhi -----	511	2,430	Mitchell -----	689	1,670	Thamesford -----	211	P.V.
Dorchester -----	101	P.V.	Moorefield -----	38	P.V.	Thamesville -----	182	816
Drayton -----	121	528	Mount Brydges -----	94	P.V.	Thedford -----	67	598
Dresden -----	369	1,525	Newbury -----	23	288	Thorndale -----	85	P.V.
Drumbo -----	112	P.V.	New Hamburg -----	587	1,441	Thorold -----	2,329	5,080
Dublin -----	41	P.V.	Newmarket -----	1,796	3,800	Tilbury -----	1,280	1,923
Dundas -----	2,781	5,001	New Toronto -----	11,338	7,514	Tillsonburg -----	1,271	4,602
Dunnville -----	1,247	3,916	Niagara Falls -----	10,937	18,770	Toronto -----	346,416	648,098
Dutton -----	242	830	Niagara-on-the-Lake -----	890	1,764	Toronto Twp. -----	2,630	V.A.
East York Twp. -----	7,535	38,316	North York Twp. -----	8,312	V.A.	Wallaceburg -----	3,312	4,802
Elmira -----	1,011	2,069	Norwich -----	402	1,301	Wardsville -----	35	221
Elora -----	443	1,185	Oil Springs -----	187	541	Waterdown -----	226	867
Embro -----	116	420	Otterville -----	103	P.V.	Waterford -----	484	1,294
Erieau -----	80	281				Waterloo -----	5,194	8,690

MUNICIPAL LOADS, APRIL, 1942

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford -----	358	1,023	Mildmay -----	115	764	Kingston -----	13,220	26,741
Welland -----	12,298	11,568	Mount Forest -----	468	1,936	Lakefield -----	332	1,301
Wellesley -----	111	P.V.	Neustadt -----	42	431	Lanark -----	81	686
West Lorne -----	178	768	Orangeville -----	710	2,558	Lancaster -----	41	570
Weston -----	4,343	5,784	Owen Sound -----	5,113	13,599	Lindsay -----	3,636	7,241
Wheatley -----	174	761	Paisley -----	119	730	Madoc -----	170	1,130
Windsor -----	48,981	103,571	Penetanguishene --	994	4,177	Marmora -----	116	1,004
Woodbridge -----	624	946	Port Carling -----	146	520	Martintown -----	34	P.V.
Woodstock -----	8,489	11,584	Port Elgin -----	476	1,415	Maxville -----	95	811
Wyoming -----	67	538	Port McNicol -----	74	950	Millbrook -----	81	749
York Twp. -----	19,025	77,175	Port Perry -----	312	1,175	Morrisburg -----	199	1,484
Zurich -----	118	P.V.	Priceville -----	10	P.V.	Napanee -----	1,339	3,241
25 and 66-2/3 Cycle			Ripley -----	75	420	Newcastle -----	193	701
Hamilton -----	153,141	163,768	Rosseau -----	35	305	Norwood -----	111	710
St. Catharines -----	28,780	30,406	Shelburne -----	251	1,053	Omeme -----	98	630
Trafalgar Twp. ---	140	V.A.	Southampton -----	538	1,467	Orono -----	80	P.V.
66-2/3 Cycle			Stayner -----	292	1,106	Oshawa -----	16,210	25,035
Bronte -----	31	P.V.	Sunderland -----	72	P.V.	Ottawa -----	35,724	150,277
Oakville -----	253	3,869	Tara -----	83	510	Perth -----	1,651	4,197
GEORGIAN BAY SYSTEM			Teeswater -----	126	873	Peterborough -----	12,250	24,400
60-Cycle			Thornton -----	28	P.V.	Pictou -----	1,074	3,400
Alliston -----	345	1,700	Tottenham -----	91	532	Port Hope -----	2,404	4,997
Arthur -----	130	1,089	Uxbridge -----	300	1,480	Prescott -----	1,435	3,120
Bala -----	148	355	Victoria Harbour --	86	979	Richmond -----	74	428
Barrie -----	3,848	9,521	Walkerton -----	938	2,534	Russell -----	60	P.V.
Beaverton -----	221	941	Waubashene -----	86	P.V.	Smiths Falls -----	2,685	7,741
Beeton -----	105	617	Warton -----	283	1,750	Stirling -----	286	947
Bradford -----	232	1,041	Windermere -----	12	117	Trenton -----	4,710	7,636
Brechin -----	60	P.V.	Wingham -----	551	2,149	Tweed -----	234	1,181
Cannington -----	172	761	Woodville -----	52	439	Warkworth -----	69	P.V.
Chatsworth -----	69	333	EASTERN ONTARIO SYSTEM			Wellington -----	168	948
Chesley -----	555	1,812	60-Cycle			Westport -----	89	725
Coldwater -----	103	545	Alexandria -----	196	1,976	Whitby -----	1,432	4,236
Collingwood -----	2,484	5,636	Apple Hill -----	40	P.V.	Williamsburg -----	91	P.V.
Cookstown -----	78	P.V.	Arnprior -----	1,075	4,019	Winchester -----	338	1,017
Creemore -----	129	661	Athens -----	93	626	THUNDER BAY SYSTEM		
Dundalk -----	211	686	Bath -----	34	325	60-Cycle		
Durham -----	341	1,874	Belleville -----	7,361	14,876	Fort William -----	14,895	30,317
Elmvale -----	152	P.V.	Bloomfield -----	91	636	Nipigon Twp. -----	167	V.A.
Elmwood -----	50	P.V.	Bowmanville -----	2,535	3,850	Port Arthur -----	41,259	23,790
Flesherton -----	48	452	Brighton -----	310	1,462	NORTH. ONTARIO PROPERTIES		
Grand Valley -----	100	645	Brockville -----	4,829	10,463	Nipissing District		
Gravenhurst -----	1,028	2,261	Cardinal -----	317	1,602	60-Cycle		
Hanover -----	1,300	3,190	Carleton Place -----	1,699	4,143	North Bay -----	4,347	16,013
Holstein -----	12	P.V.	Chesterville -----	259	1,094	Patricia District		
Huntsville -----	1,161	2,943	Cobden -----	75	643	60-Cycle		
Kincardine -----	696	2,483	Cobourg -----	2,298	5,062	Sioux Lookout -----	300	1,967
Kirkfield -----	25	P.V.	Colborne -----	189	960	Sudbury District		
Lucknow -----	275	1,977	Deseronto -----	172	1,002	60-Cycle		
MacTier -----	126		Finch -----	98	396	Capreol -----	192	1,660
Markdale -----	198	776	Frankford -----	125	1,095	Sudbury -----	8,091	32,731
Meaford -----	563	2,759	Hastings -----	100	823			
Midland -----	4,399	6,627	Havelock -----	125	1,103			
			Iroquois -----	218	1,123			
			Kemptville -----	362	1,230			

Victory IS IN THE MAKING AND **HYDRO** SPEEDS THE WORK!

● Right here in Ontario, thousands of young patriots from every continent are in training to win Victory for the democracies—from the Air

Amazing! Some of our training camps are like good sized towns. They make new demands upon Hydro. They need electricity for lighting, maintenance, airfields, pumps, mechanisms, radio; in workshops, rooms, kitchens. Never before has so great a Cause called upon electrical energy to do so much.

Today, your Hydro is supplying six times as much power as at the close of the last war and a large and growing part of this is necessary for war time production. Ontario's great aircraft indus-

tries are powered by Hydro, also factories and foundries making all manner of military equipment. This war is not only mechanized but electrified!

You are, of course, proud that your Hydro System is playing so great a part in the victory program. Of course, you will economize in your use of electric energy for all peace-time pursuits—and forego for a while further extensions of electric service. With all of us, war needs must come first!

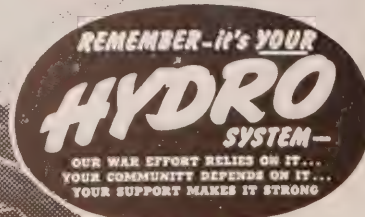
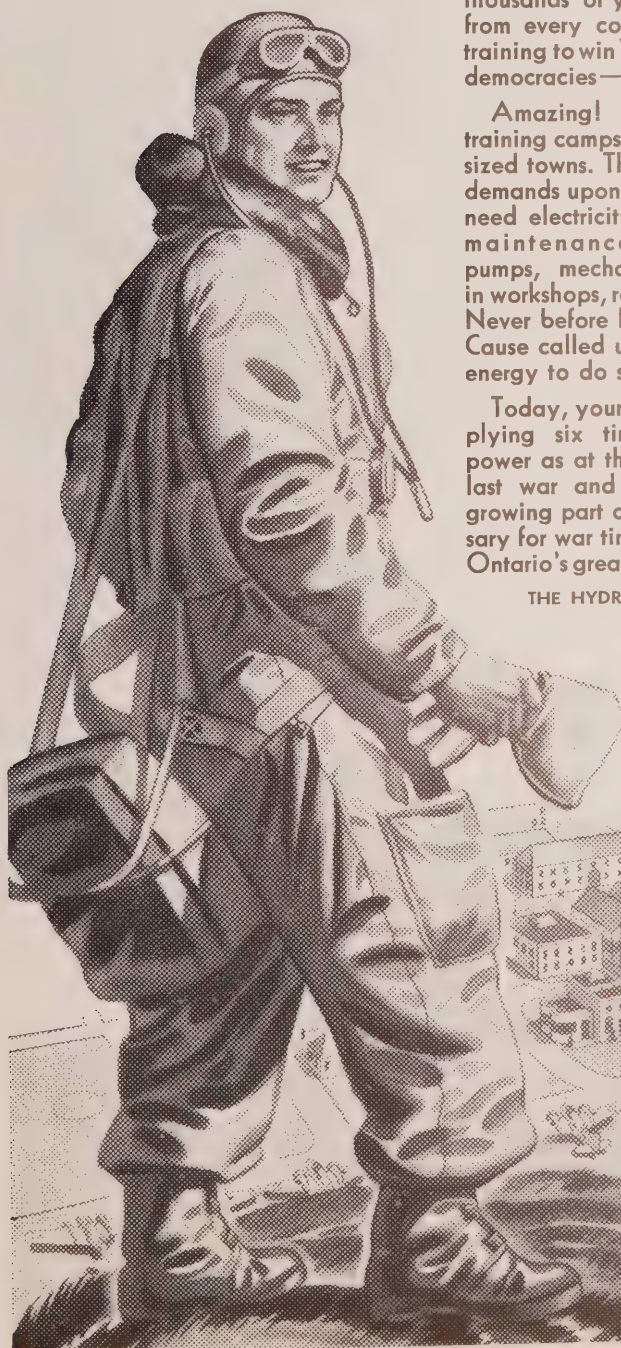
Electrical Thrift Hints

Always use the heating element best suited to the work in hand. That saves current, prevents boil-overs. Use automatic controls as directed. Don't leave elements on 'high' a moment longer than necessary. Have your dealer or local 'Hydro' put your appliances in good order.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

CANADA ASKS—"BUY MORE VICTORY BONDS"

Every Bond you buy, large or small, will be a pledge of your determination to back up our gallant fighting forces.





THE HUM OF **HYDRO** IS THE *Voice of Victory*

● The war calls everyone to a post in 'the front line'—in or out of uniform—and your Hydro answers "Ready!" Giant energy, tapped from Ontario's waters, flows over 6,000 miles of transmission lines to shops, mills, factories, foundries, mines and shipyards—wherever the tools of victory are being forged.

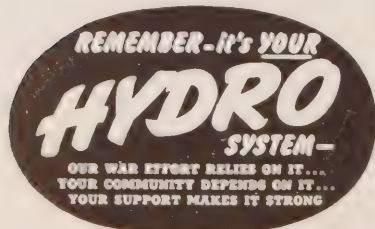
It may be simply shell-casings, or it may be thundering tanks, swift, sturdy corvettes or sky-filling planes. Whatever it is, Hydro energy is there to speed the work in a thousand plants.

Your Hydro was ready for war-time industry. Ontario's citizens can take pride in that. And,

outside of industries, Hydro is supplying the needs of 600,000 users in city homes and 131,000 users in rural districts.

Of course, war-time needs have first call on Hydro power. Furthermore—there must be a sparing use of metals and materials once commonly used in extending Hydro service. These are demanded in war industries—vital to victory!

New projects, new war plants with new machines for new production are on the way. Hydro must and will supply the power needed. To this end, Hydro earnestly solicits the co-operation of all of the people of Ontario.



WARTIME HINTS FOR HOMEMAKERS

You can save current consumption by having your electrical dealer or local 'Hydro' put your appliances in first-class working order. Cook several courses at one time in the electric oven, using bottom element only. Never leave the kitchen with elements on 'high'. Operate the automatic controls as directed.

Canada asks - Buy More War Savings Certificates

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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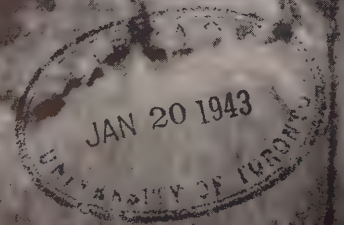
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THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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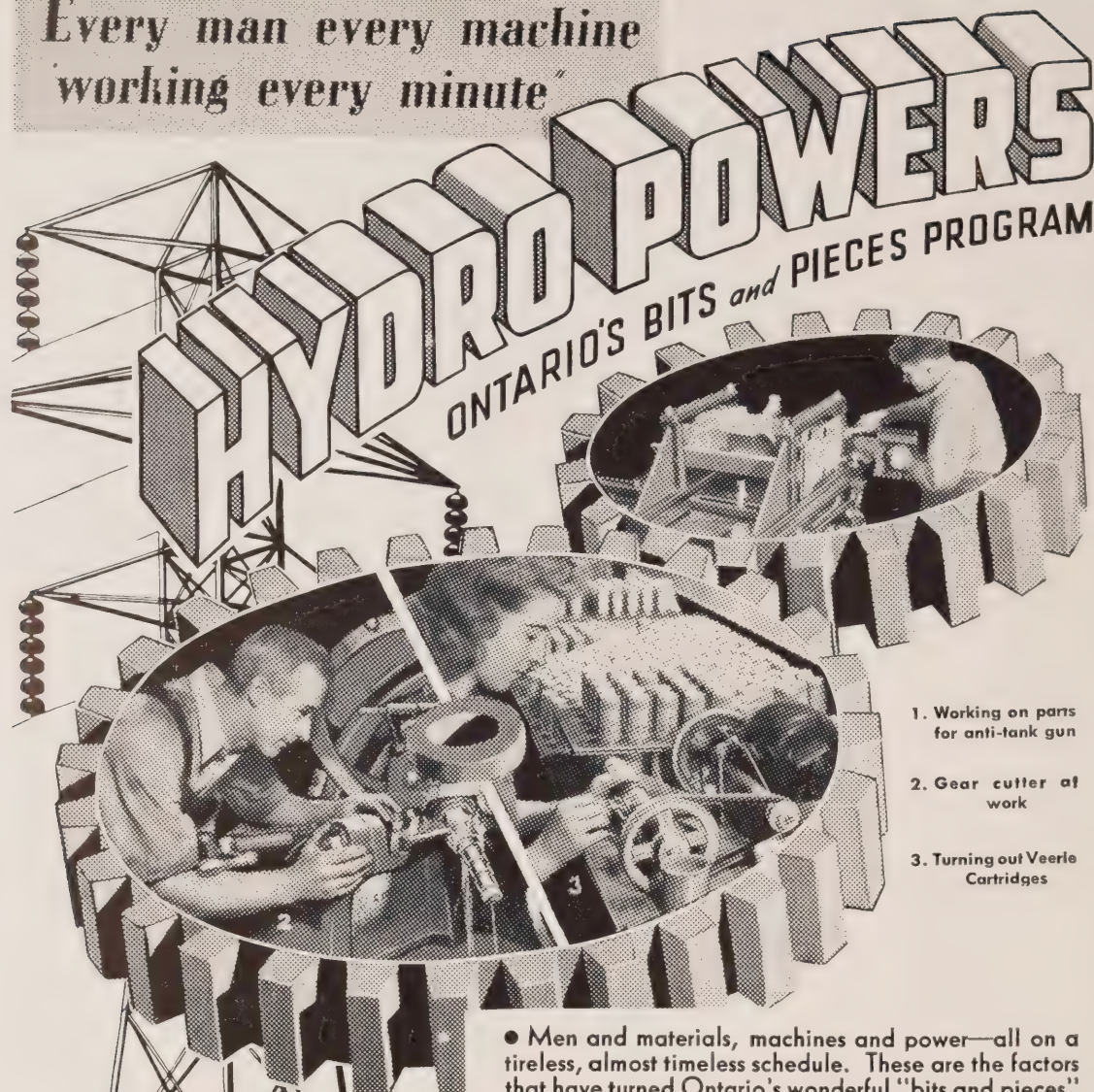
HYDRO BREAD LINES

VOL. 29

AUGUST 1942

NUMBER 8

"Every man every machine
working every minute"



1. Working on parts
for anti-tank gun

2. Gear cutter at
work

3. Turning out Veerle
Cartridges

WHAT "BITS AND PIECES" MEANS

In scores of Ontario plants "bits and pieces" are being manufactured for war weapons, some parts very minute others weighing many tons are being cut, moulded, machined and finished. These are finally assembled into fighting units at central points. That's "bits and pieces" production. Hydro powers these plants. As a further contribution to the war Hydro's own maintenance equipment when not required for its own use is producing "bits and pieces." Hydro makes men, minutes and materials count for more—provides power to help Ontario produce about half of Canada's total of war weapons.

● Men and materials, machines and power—all on a tireless, almost timeless schedule. These are the factors that have turned Ontario's wonderful "bits and pieces" production into a well co-ordinated, steady flow of war materials.

Hydro-Electric energy is the driving force that is enabling hundreds of Ontario plants, from little village machine shops to huge industries, to be dedicated to the great crusade for Victory.

In excess of 2,000,000 horsepower of electrical energy is being supplied in Ontario by Hydro—approximately one half is now harnessed to war production. More is demanded. New plants are being projected.

NOW—let us all conserve Hydro by "bits and pieces" in our own homes and offices, to keep Ontario's wartime "bits and pieces" program going full blast. Every man and every machine must be kept working every minute.

HOW TO SAVE ELECTRICITY

Turn off electric lights when not needed. Use the electric range sparingly. Everyone must resolve to save some electricity in some way every day. Every unit of electrical energy that can be saved for wartime purposes will help.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

formerly The BULLETIN

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



"Hydro Bread Lines" is the appropriate title of this month's arresting front cover subject which is the third in the series made available to "Hydro News" by J. H. Mackay of the Commission staff. It was taken in a well-equipped kitchen at a Hydro construction camp where, on an average, 250 loaves of bread were baked daily to supply the needs of some 300 men.

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August 1942

Number 8

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Conservation—A Weapon of this War

BY the time the August issue of Hydro News comes off the press an official announcement may have been made by the Power Controller concerning the details of the power conservation regulations. At the time of writing, however, certain general facts appear to be clear.

The regulations, which are expected to become effective next month, will apply to designated "power shortage areas." This means that Southern Ontario, including the inter-connected Niagara, Eastern Ontario and Georgian Bay systems along with parts of Quebec where there are widespread industrial networks, will be treated as one area. Because of the expected power shortage, created by steadily increasing industrial loads, this area will probably be the first to be affected under the projected conservation plan.

It has already been indicated that the regulations will prohibit the use of power for such purposes as interior or exterior sign lighting; outline and ornamental lighting; lighting for decorative or advertising purposes; outdoor and flood lighting, including field lighting for amusements or sports and white-way lighting above minimum requirements for safety; the operation of any air heater or electric grate in a store or office building.

Power for certain other purposes is likely to be restricted to a specified number of watts per square foot, while there will be some reduction in street lighting.

Domestic consumers of electricity will be told how they can individually do their part in assuring an adequate supply of power for essential war industries during the coming fall and winter when the Province will face an estimated shortage of more than 250,000 horsepower.

Any little personal inconvenience which may be experienced by eliminating the use of electricity for non-essential purposes pales before the grim realism of the present war and all its far-reaching implications. Recognition of salient facts should inspire all loyal Canadians to unite in their determination to

make any sacrifice or temporary adjustment which will enable Canada to play her full part in hastening the day of victory for the Allied Nations.

At a time like this, power conservation becomes just as much a weapon of war as planes, tanks, ships and guns. Handled effectively and conscientiously, it can be a very potent weapon for it will assure an adequate supply of power for finishing the job to which we have set our hands and minds.

* * *

Timely Warning

A NUMBER of arresting posters have been produced by the Director of Public Information at Ottawa, emphasizing the far-reaching dangers of "careless words" and "loose talk" which may come to the ears of enemy agents. One of these posters is reproduced on the inside back cover of this issue of Hydro News.

These messages are timely and to the point and should serve as a warning to all loyal Canadians that they must guard against discussing ship movements, defence plans, munition factories, troop movements, harbour facilities, aircraft production and supply stores. Even the best of friends should refrain from discussing such matters, for best friends have best friends who have best friends and so on ad infinitum.

At the same time, Commissioner S. T. Wood of the R.C.M.P., recently told the people of this country that he is convinced the enemy is active in our midst, conducting a destructive whispering campaign which is designed to undermine Canada's war effort.

Coming from a man who is at the head of an organization which is quietly and efficiently doing an all-important job twenty-four hours every day, this warning should not be accepted in a spirit of disinterested complacency.

By reason of their association with a public ownership institution which represents a vital driving force behind Canada's war production programme, Hydro employees will be quick to recognize the significance of these facts. They, in common with all other patriotic Canadians, will co-operate in helping to frustrate the efforts of enemy agents who are either seeking information or spreading false rumours.

This month's page 2 illustration gives an impression of the construction work now proceeding at the site of the new DeCew Falls development. Taken from the top of the escarpment, it shows the size of the opening made to accommodate the large penstock that will carry the flow of water to the generating plant which will be built in the valley below.

Men and machines carve a site out of solid rock for the new plant. Inset shows drilling operations.

DEC EW

Takes Shape



Once upon a time, giant tires were available on request for rugged construction trailers. This one was spotted at DeCew.

brace the six-million dollar power development scheduled to be completed by next summer.

Waters diverted from the far-off Albany watershed, through the Long Lac and Ogoki diversions, will be har-

TO the reverberating roar of grinding, pneumatic drills and the coughing clatter of gouging bulldozers, a precipitous wall of rock at DeCew Falls is gradually assuming the contours which will em-

nassed to drive a single-runner Francis turbine which will, in turn, set in motion a 450-ton generator capable of throwing an additional 65,000 horsepower into the Southern Ontario network.

This unit, with the exception of parts to be embedded in the concrete foundations, will be brought from the Canyon development on the Abitibi river in order to save time and conserve materials for other purposes.

Viewed from the sweeping expanse of tree and grain-capped valley where the Twelve Mile creek rolls along to Lake Ontario at Port Dalhousie, the new DeCew Falls power house, when completed, will bear a marked resemb-

lance to Hydro's Queenston plant where power is developed under a head of 300 feet. At DeCew provision will be made for increasing the initial head of 265 feet to 280 feet.

While an army of some 250 men speed the construction of the new plant, the humming generators of the old DeCew power house, whose squat rambling structure stands nearby, recall the enterprise of the group of men who first undertook the development of electric power by diverting surplus water from the Welland canal and conveying it to the escarpment of DeCew Falls at the close of the last century. Acclaimed as "The Cradle of Canadian Hydro-Electric Industry," DeCew Falls first fired the imagination of John DeCoux, who, it is recorded, originally purchased the site for a blanket and a doubloon (21s sterling) a century before the first power plant there became a realization.

Taken Over by Hydro

It was in the year 1930 when this historic development was taken over by The Hydro-Electric Power Commission of Ontario, and it is still making an important contribution of 50,000 horsepower to the resources of the Niagara and its inter-connected systems in Southern Ontario. The transition from a peace to a wartime basis of operation, coupled with the still growing demands for more power by essential war industries, emphasized the need for additional generating capacity. As a result, DeCew Falls was one of the sites selected because it presented an opportunity of adding a new source of power at a comparatively early date.

Explaining how the necessary water will be provided to operate the new DeCew plant, Otto Holden, chief hydraulic engineer of The Hydro-Electric Power Commission of Ontario, directed attention to the importance of the two diversions in the Lake Nipigon area. The Long Lac diversion, he pointed out, is now in operation, bringing water which normally flowed into James Bay into Lake Superior. This has been accomplished by means of a dam on the Kenogami river some 15 miles north of Long Lake and by excavation of a six-mile channel through the height of land at the south end of this lake. At the terminus of this channel are control structures, including a log slide for the passage of timber. These works, in addition to diverting water, permit the movement of timber to market from an area of over 1,500 square miles.

The second project, known as the Ogoki diversion, which will be completed by next summer, will divert water, formerly flowing into James Bay, into Lake Nipigon. The combined flow from these two diversions will facilitate the generation of additional power at developed and undeveloped sites between Lake Nipigon and the mouth of the St. Lawrence river, including the new DeCew Falls plant.

Provision is being made to accommodate the increased draft of water from the Welland canal under conditions suitable to navigation by construction of a new channel north of Allanburg, utilizing a portion of the Third Welland canal which will be enlarged at this point. This channel will connect the ship canal with a large headpond known as Lake Gibson and the channel between the north and south sections of this lake will be enlarged to pass the increased flow of water. The earth removed from these sections will be used to raise the dykes containing Lake Gibson, thus providing for higher water levels at a later date.

Technical data show that Lake Gibson will provide the pondage necessary to permit the operation of a plant at variable loads to conform with the changing rate of demand throughout the 24 hours of the day at a nearly constant inflow.

Excavated out of solid rock, a new headrace canal, 2,000 feet long, is being constructed from the lower or northern end of Lake Gibson to the east of the present gate house. This excavation work involves the removal of some 85,000 cubic yards of rock, some of which is being used to protect the enlarged earth dykes, while another portion will be utilized for necessary works in the Twelve Mile creek. At the end of the new headrace canal and

Top: J. N. Stanley, superintendent, surveys construction operations at DeCew from the top of the escarpment.

Centre: These men have the protection of safety ropes as they change the rock contours at the top of the cliff.

Lower: This illustration shows a section of the new penstock at DeCew. It is 16½ feet in diameter.





Upper left — Pioneers whose names are associated with the construction of the first DeCew development in 1897-98 are shown at the dinner which marked the opening of the plant.

Centre — The old DeCew plant which was taken over by The Hydro-Electric Power Commission of Ontario in 1930. Located near the site of the new DeCew development, now under construction, it is still in operation.



Lower Right—These are construction men of the Gay Nineties, engaged in the building of the first generating plant at DeCew Falls.



in close proximity to the DeCew Falls escarpment is now rising the formwork of the concrete structure that will encase the racks and control gates which are designed to facilitate the flow of water from the canal to the concrete-encased steel pipe or penstock.

With a diameter of $16\frac{1}{2}$ feet, or more than two and a half times greater than one of the penstocks at the old DeCew plant, this large pipe will project through a cut in the solid rock at the top of the escarpment. From this towering apex, the big penstock will sweep down the grim face of the rock wall to the power house at the foot of the cliff, carrying the flow of water which will set the turbine in motion.

Can Add Additional Units

Investigations of the DeCew site have revealed that the rock is about 90 feet below the ground surface in the vicinity of the old plant. It has, therefore, been decided to move the new power house 200 feet nearer the cliff in order to provide a more solid foundation for the larger units which, ultimately, will be installed. The first unit, when installed, will comprise revolving parts which, alone, will weigh 265 tons and make 150 revolutions a minute. Specifications show that this one generator, which has a diameter of 29 feet and a height of 25 feet, will have a capacity that will exceed the total generating capacity of the nine generators in the old DeCew plant by 15,000 horsepower.

New transformers, for the purpose of stepping up the voltage for connection to the main transmission system, each weighing about 60 tons, will be located near the power house so that they can be handled by crane for necessary maintenance work.

The channel, which will be excavated to link the power house with the Twelve Mile Creek, will start the spent water on its way to Lake Ontario, and in order to take care of this increased flow in the Twelve Mile creek itself the channel in this waterway will be materially enlarged. At Welland Vale, however, Hydro engineers have to cope with the problem of passing the additional flow through a rather restricted area. As a result, it has been decided to relocate the roadway at Welland Avenue to the east and to enlarge the channel adjacent to the existing unused lock. A similar condition has been found to exist at Port Dalhousie where provision is being made for an additional waterway to accommodate the increased flow. This is being accomplished by the excavation of a new channel immediately east of the present navigation lock, and the construction of control works which will permit regulation of levels of Martindale pond.

While only one unit will be installed at the new DeCew plant at present, the power house will be constructed so that additional units may be added at a later date, and that, eventually, the old DeCew power house will be retired from service.

To facilitate the work necessary for the installation of these additional units, provision for such an extension is being made in certain of the works now being constructed. At the intake from the Welland canal, the structures are being made of sufficient size to accommodate the increased flow. The head-race canal leading from Lake Gibson to the headworks at the top of the escarpment is now being excavated of sufficient size for an additional unit, and the headworks itself will also have a similar capacity.

As already pointed out, the pipe or penstock which carries the water from the gate house to the turbines in the power house will have a diameter of 16½ feet. To provide for the installation of similar pipe lines and extension of the power house later, additional excavation is being

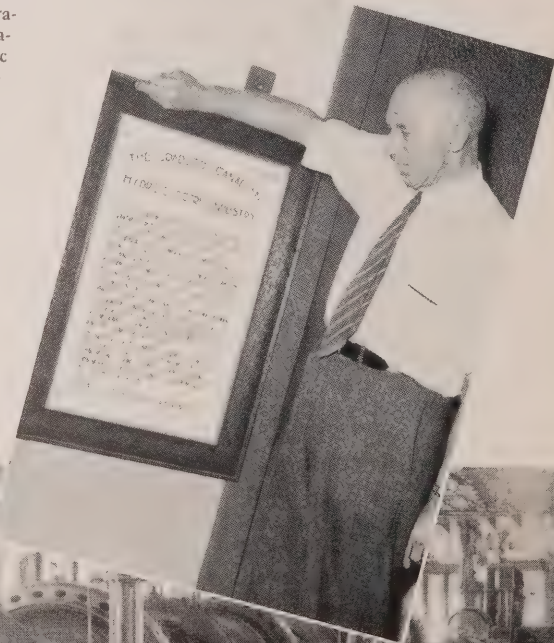
completed. The carrying out of this excavation now will facilitate these future operations.

Although the one unit, which will be installed at the new site, will generate more energy than the combined units in the old plant, the power house now under construction will be small in actual size compared to the old one. The respective dimensions are: new Decew plant, 75 feet by 95 feet; old plant, 50 feet by 490 feet.

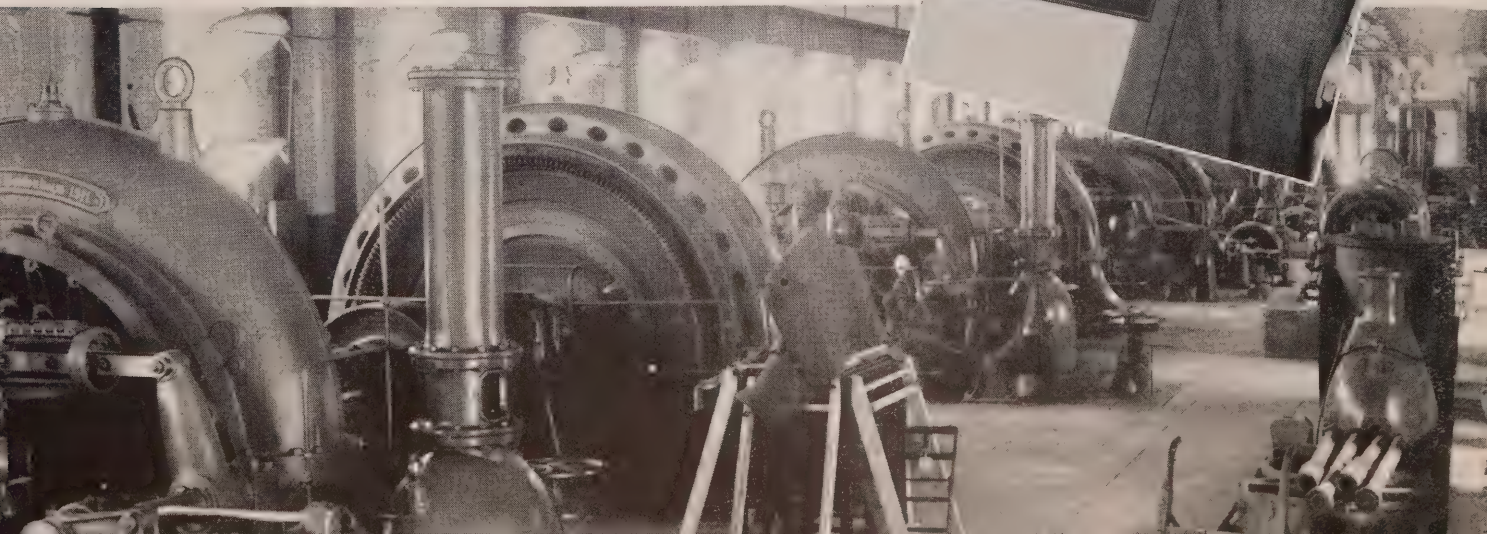
When construction work has been finally completed at DeCew approximately 1½ million cubic yards of earth and ¼ million cubic yards of rock will have been excavated. These excavations are now well under way as the tireless bulldozers bite into earth and rock and toss jawfuls of dirt into waiting caterpillar-driven trucks which chug their way up and down winding paths pitted with rolling ruts of slimy mud. High above these operations, on narrow ledges which protrude from the face of the cliff, gangs of men, with safety ropes lashed round their waists, are gradually changing the upper contours of the rock with drills and picks.

The work at DeCew is being done largely by the Commission's construction staff under the direction of Dave Forgan, construction engineer, while Walter Jackson and J. N. Stanley are resident engineer and superintendent respectively.

Right: David A. Robson, superintendent of the old plant, stands beside a scroll which commences with this paragraph: "The generation of hydro-electric energy and its transmission at high voltage to distant points had its inception here at DeCew Falls."



With a capacity of 65,000 horsepower, the one unit at the new DeCew development will generate 15,000 more horsepower than the combined units (shown here) at the old DeCew plant.



Role of Electrical Utility In Helping Conserve Power

By **M. J. McHENRY**

CHIEF PRIORITIES OFFICER, H.E.P.C.

ELECTRICAL Utility Systems in Canada have assumed in full measure, a great responsibility under Wartime conditions. This responsibility is to devote their essential service to the winning of the war. The ever-increasing demand for power to supply industrial users engaged in producing war materials is placing a great strain on their systems. The extraordinary demand for raw material in producing war equipment imposes on all utilities the problem of conserving their supplies of material and equipment for essential services only.



M. J. McHenry

The application of electrical energy for the production of war equipment is today of such magnitude and importance that it has absorbed the full producing capacity of generating plants. In those areas where there are large concentrations of industry, the utility is faced with the problem of conserving power for war uses. The extent of such conservation will depend on many conditions, and these conditions will vary with different utility systems.

Daylight Saving Helpful

Power saving may be required to keep within the ultimate total generating capacity (peak load), or to meet the total available kilowatt hour capacity (energy available). Since most utilities in Canada depend on hydraulically generated power, either or both of these factors may dictate the conservation needed. The peak load which may be carried safely is set by the total number of generators which can be operated at any one time while the energy available is largely affected by the water storage capacity, and the seasonal run-off. Some of these factors are beyond the control of the operating organization. It is, therefore, almost impossible to lay down a standard conservation program which will be completely applicable to all utilities.

The situation is complicated further by the varying demands of different classes of industry. The great production of industry converted to total war supply makes for high load factor. As more and more industry is converted to wartime manufacture, less and less relief can be obtained by reducing the demand of the relatively small amount of less essential factories. Accordingly, reductions in peak demand and energy must come to a great extent from other classes of service.

Considerable saving in peak demand has been obtained through the extension of daylight saving time and the re-

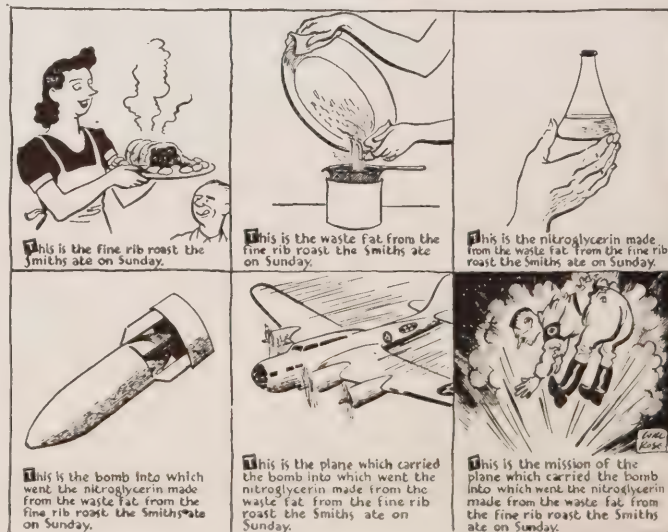
sultant spreading of industrial, commercial and domestic peaks at certain times during the day. But this is not now sufficient. Curtailment will be required of non-essential load in the domestic, commercial and non-essential industrial classifications. Some of these classifications may include interior and exterior sign lighting, show window and display lighting, ornamental lighting of all types, and the domestic consumer. Some uses in the lighting field may be totally restricted, as well as service to certain domestic appliances of the space-heating type. In all cases, a program to promote general co-operation in saving power will be included. Such a program would instance the turning-out of all lights except when vitally needed, the reduction of electric range consumption by care in cooking and saving in water heaters through prevention of water leaks.

From an industrial standpoint, the necessity for closer co-operation between utilities and power users, is now, more than ever before, of vital importance. The power user must obtain maximum production consistent with reasonable power costs, and the utility must make sure that the available power is used with maximum efficiency, in order that every essential user can be supplied.

Understanding of Factors

The efficient and economical use of electric power in industry depends on a sound understanding of the factors
(Continued on page 18)

A Lesson in Conservation



Drawn especially by Carl Rose for "Victory," official weekly bulletin of the Office of War Information at Washington, the above cartoon tells a graphic story which speaks for itself.

TOIL IN FOREST INFERNO RESTORES POWER SERVICE

Courageous Hydro Line Patrolmen and Maintenance Crews Work 14 to 17 Hours A Day During Destructive Outbreak In Patricia District -- 44,000-Volt Transmission Line Damaged.

A DESTRUCTIVE forest fire which raged in the far reaches of Northern Ontario recently, causing serious damage to the Commission's 44,000-volt transmission line running between Uchi switching station and Crow River transformer station, has focused attention upon the courageous service rendered by Hydro line patrolmen and maintenance crews.

Disregarding personal safety and enduring severe physical hardship, these men, reports reveal, toiled from 14 to 17 hours a day in intense heat and choking smoke to restore service on this line which is in the Patricia District of the Northern Ontario Properties.

Swept Into Tree Tops

Rainfall in the district had been considerably below normal during the early spring, and when an exceptionally high wind arose, a small fire in the outskirts of Uchi Lake townsite was quickly swept into the tree tops at the edge of the settlement. Driven by the fury of the wind, the fire began to eat its way into the depths of the forest and in a very short time the area was a scene of blazing timber and thick clouds of rolling smoke. So violent was the wind that it ripped sections of roofing from a number of Hydro colony houses.



Unable to use tractors or teams of horses because of the swampy terrain Hydro gangs had to haul equipment and parts into the area. This illustration shows a gang dragging in one of the twenty-three replacement poles used in restoring service.



Shrouded in smoke and lashed by leaping flames, this "scorched earth" scene is typical of the whole area in the Patricia District of the Northern Ontario Properties which was ravaged by a destructive forest fire recently.

At first the fire started to the north of the power circuit and travelled in an easterly direction. It entered the Hydro right-of-way about $1\frac{1}{2}$ to 2 miles from the Uchi switching station and streaked along the line for a distance of more than 8 miles. The first interference with service occurred when breakers at both ends of the circuit were tripped. Voltage was restored within two minutes, but the circuit was automatically removed from service a few minutes later, when it was found impossible to re-energize it. At about the same time the telephone circuit failed, and it was apparent that the fire was making serious headway in certain sections of the line.

Line Gangs Drag Poles

The Operating department staff rushed men into the district and made a survey to determine the extent of the damage. Some sections of the line had been completely razed, and it was found necessary to replace poles, cross-arms, insulators and lengths of conductor at various points. A gang started in to cut poles, stubs and crossarms to serve as replacements, and equipment was assembled to put the line back into an operating condition. But difficult terrain hindered the transporting of materials to the site of the damaged sections, and because of the swampy land it was impossible to use a tractor or a team of horses.

All material and equipment had to be borne by manpower, and several poles had to be dragged by the line gangs for more than a half-mile.

A total of 23 new poles had to be placed in the line, as well as 5 stubs, 11 sets of crossarms and 70 power insulators. Damage to the power conductor was relatively small, but over 1,000 feet of new telephone conductor had to be inserted. After the lines had been re-energized, additional stubs were added to reinforce the poles.

(Continued on page 22)



Best Apples Not On Top

"Since my return from the West, I have just seen the first and second editions of the *Hydro News*, and I would like to congratulate you and your editorial staff and commission. As the first issue was followed by a second issue as interesting and well-edited as your first, we look forward to each following issue with interest, as we know that all the best apples were not put on top of the barrel."—George D. Leacock, president, Moloney Electric Company of Canada Limited, Toronto.

"A Worthy Contribution"

"May I add my congratulations to what I feel will be a large number complimenting the Commission on *Hydro News*. The change is quite in keeping with the progressive change the Hydro is undergoing, and I am sure it will make a worthy contribution to all who have the privilege of reading it."—George H. Challies, M.L.A.

"Enthusiastic Reception"

"Congratulations on the more attractive change in publication. The talk of our Hydro family in Smiths Falls was the new *Hydro News*, a publication of which we are, and will be, more justifiably proud."—George A. Phillips, Jr., secretary-manager, Smiths Falls Hydro-Electric System.

"A Wonderful Improvement"

"May I extend our heartiest congratulations on the new publication *Hydro News*. To me, it is a wonderful improvement over the old *Bulletin*, and will be more widely read."—Milton R. Beaul, chairman, Bothwell Hydro-Electric Commission.

"Resolution of Congratulation"

"The Sarnia Hydro-Electric Commission adopted the following resolution, and I have been asked to forward it to you: 'That The Hydro-Electric Power Commission be congratulated upon the change made from *The Bulletin* to the *Hydro News*. They believe it to be a wonderful improvement which will be greatly appreciated.'"—Miss K. Ciceri, secretary, O.M.E.A.

"Very Satisfactory Publication"

"I have gone through the initial copy of *Hydro News*, and I certainly wish to congratulate the editors on having produced a very satisfactory publication. I am confident that this magazine will be appreciated by utilities' staffs in preference to *The Bulletin* of the past."—J. W. Peart, B.A.Sc., general manager, Public Utilities Commission of St. Thomas, Ontario.

To The Fourth Estate

A NUMBER of enquiries have been made by newspaper and trade paper editors as to whether it is permissible to use material appearing in *Hydro News*. The answer which we have given—and which we are publishing now in fairness to all members of the Fourth Estate—is that any material published in *Hydro News* may be used.

While pertinent matter is submitted for the approval of the censor before publication in *Hydro News*, we would remind editors that they must assume responsibility for reprinting.

We welcome the opportunity of being able to reciprocate the courtesy and co-operation of the press which frequently portrays the vital role Hydro is playing as a contributing organization in the "Arsenal of Democracy".

"An Even Better Publication"

"This letter is to express appreciation of the recent receipt from you of the June issue of *Hydro News*, which replaces *The Bulletin* formerly sent to me each month. It appears to me that the *Hydro News* is an even better publication than *The Bulletin*, all issues of which I have endeavoured to keep for reference. I hope you will continue to send me the *Hydro News*."—John M. Duncan, principal engineer, Rural Electrification Administration, St. Louis, Missouri.

"Full of Interesting Information"

"Just a few words to compliment you on the production of the new magazine *Hydro News*. For many years, we have received the *Hydro Bulletin*, and I believe that you did the right thing at the right time in changing the type of magazine which you have been publishing. It is full of interesting information to outsiders as well as to Hydro people, and well produced."—R. H. Mather, manager, Commercial & Distribution Department, The Shawinigan Water & Power Company, Montreal.

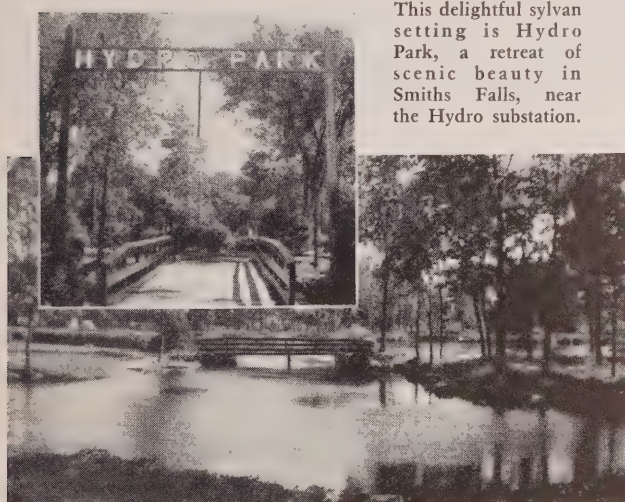
"Has A Distinct Appeal"

"Your new publication has a distinct appeal to our staff. We always appreciate receiving your monthly magazine. It has so much of common and valued interest, and your *Hydro News* is a credit to your Commission."—W. L. Bird, vice-president, Kaministiquia Power Co. Limited, Fort William.

Smiths Falls Hydro Now Free of Debt

After many years of commendable progress, the Smiths Falls Hydro-Electric Commission has announced its final debenture payment.

Hydro was introduced to Smiths Falls in 1918, when the members of the local commission were chairman J. Frank Montgomery and commissioners George B. Frost and mayor William S. Murphy, with Harry F. Shearer as secretary and manager. After purchasing the Citizens' Electric Company and the Smiths Falls Electric Power Company, the Smiths Falls Commission contracted for a load of 500 horsepower. Although such a large contract was regarded with apprehension by many at that time, the local commission's far-seeing policy was soon vindicated, and load growth continued at a steady rate. Today, the Smiths Falls utility handles a load of approximately 3,000 horsepower, serving some 2,400 consumers, and the annual revenue, which was \$38,000 in 1918, is now in the neighbourhood of \$100,000. Rate reductions to consumers have been effected from time to time, and Hydro users have received over \$105,000 in rebates, it is reported. From 1935 until 1939 alone four reductions in rates are recorded in addition to considerable rebates to consumers.



This delightful sylvan setting is Hydro Park, a retreat of scenic beauty in Smiths Falls, near the Hydro substation.

As an operating improvement in the area of the substation, the local commission last year replaced the outgoing feeders, which were supported by wooden structures, with underground cables, thereby eliminating the hazard of high-tension lines directly over the roof of the building.

Situated in the Rideau River, not far from the local substation, is an island known as Hydro Park which has become a point of scenic beauty in the Smiths Falls area. As a works project in the depression years the island, formerly called Girls' Island, was cleared of thickly wooded growth and converted into a usable park area. Following the extensive beautification programme, a contest was held to select a new name for the property. "Hydro Park" proved to be an apt and popular identification.

The present members of the local commission are Ernest V. Dyke, chairman; mayor Harold P. Mark and F. A. Wale, commissioners. The local manager and secretary is George A. Phillips, Jr.

STILL "GETS AROUND"



R. S. "Smoky" Reynolds, manager and secretary of the Chatham Public Utilities Commission, is stepping on the pedals instead of the gas these days when he wants to "get around". "Smoky" is shown above—mounted. His friend is Mark Beaudoin.

Safety

A nation is the worker at his bench or in the field. It's the same worker going home after the day's toil. It's his family—the wife preparing the evening meal; the children still at play.

A nation is a productive machine of farms, factories, forests and oil wells; of dams harnessing nature's power; of gleaming rails, farflung airlines, ribboned highways.

But a nation is more than its material parts. It is Freedom and Security.

To this Freedom and Security, Safety is vital. It protects the people and all the things that go to make up a nation.

But Safety, too, goes beyond the merely physical. A worker saved from death or injury not only is protected, but his family is spared sorrow and suffering, his productive task unhindered by delay.

All this is true whether the accident might have occurred on the job, on the highway or at home.

Universal Safety offers Freedom and Security. —Accident Facts.

R. B. Chandler (left) manager of the Port Arthur Public Utilities Commission, assists F. D. Jackson, secretary-treasurer, in the mortgage-burning ceremony.



PORT ARTHUR Citizen

A PUBLIC celebration of unique interest took place at Port Arthur recently when the Public Utilities Commission of that enterprising northern centre staged a mortgage-burning ceremony in the presence of some 4,000 citizens to mark the retirement of all debt against its Light & Power and Street Railway departments. As a consequence a \$3,000,000 document "went up in smoke".

When the Public Utilities Commission was established in 1915, it assumed the control and operation of the city's four major public services, Light and Power, Telephone, Street Railway and Waterworks, and in the intervening years, has guided these utilities to the point where two of them are now entirely free of debt, and the capital debts of the remaining two have been substantially reduced.

Over a span of 50 years, from 1892 to 1942, the total capital expenditure on the Light and Power department was \$1,941,915.11. Surplus revenue funds of \$1,307,953.22 reduced this outlay to \$633,961.89, and debenture issues took care of the balance. For the same period, the expenditure on the Street Railway department was \$942,670.89, which was balanced by surplus revenue funds of \$62,238.12 and a debenture issue of

\$880,432.77. The debentures on behalf of these two services were entirely paid off this year.

The committee in charge of arrangements provided a novel setting for the celebration of this noteworthy achievement. Prior to the actual proceedings, an old fashioned street car, a replica of the open-sided trams used 50 years ago, made a "run" along the main thoroughfares with officials and old-timers aboard. The route was lined with thousands of spectators, and the old car trundled along to

the lively accompaniment of a band of Scottish pipers. The rallying point of the ceremony was a platform erected in a park area directly opposite the Commission's imposing eight-storey administration building. Civic officials of Port Arthur and Fort William, including members of both commissions and 16 veteran employees of the Port Arthur Utility were seated on the platform, with Dr. M. P. Benger, chairman of the Port Arthur Public Utilities Commission, presiding.

The honour of touching off the fire, which figuratively consumed some \$3,000,000 of utility debt, went to F. D. Jackson, veteran secretary-treasurer of the Commission, who, in the course of his remarks, observed that "the old timers who, with courage and resourcefulness, started these utilities in a time of adversity and tribulation, built better than they knew. Their faith in the future of this community has been justified."

Progressed Favourably

Mr. Jackson gave a brief résumé of the debt position of the four utilities since their inception, stating that the first debenture was issued in 1891, when the city had a population of 2,400. The amount was \$75,000, and it was used for the construction of a street railway from Port Arthur to Fort William. Down through the years all four services have progressed favourably from a financial standpoint, so that at the present time there remains unpaid the relatively small balance of \$355,000. Of this amount, \$53,000 is debited to the Telephone System and \$302,000 to the Waterworks Department.

Other speakers taking part in the proceedings included commissioners Sam Ashton and Allan Gray of the Port Arthur Commission; mayor C. W. Cox of Port Arthur; acting mayor R. Carson of Fort William; George Hodder, member of the Street Railway Committee of 50 years ago; alderman H. Badanai, chairman of the Fort William Public Utilities Commission; and C. H. Moors, chairman of the

Fort William Hydro-Electric Commission. The old-timers, who were guests of honour on the platform, were introduced by commissioner R. G. Walsh of Port Arthur.

An interesting contribution to the successful event was made by R. B. Chandler, manager of the Port Arthur Commission, who compiled a table of historical data on the growth of the Light and Power Department. Tracing back the electrical development of the Port Arthur district to the year 1885, this table was reproduced on the back of the programmes which were distributed among the citizens.

CONVENTION DATES ANNOUNCED

District O.M.E.A. Convention dates have been announced as follows:

August 20 and 21—District No. 3, Northern Ontario, at Port Arthur.

September 2—District No. 6, North-Western, at Galt.

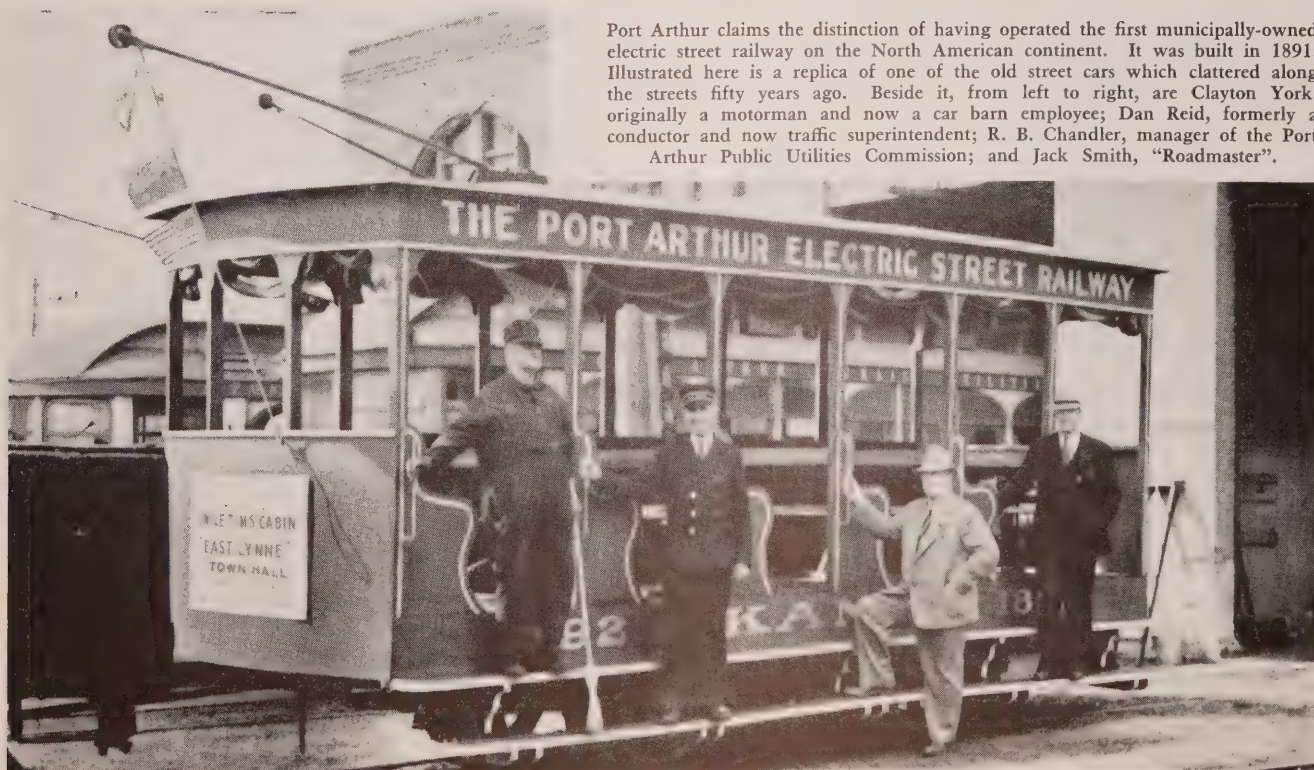
September 16—District No. 1, Eastern Ontario, at Brockville.

September 23 (tentative date)—District No. 7, Mid-Western, at London.

October (date not set)—District No. 5, Niagara, at Dundas.

celebrate as mortgage is burned!

Port Arthur claims the distinction of having operated the first municipally-owned electric street railway on the North American continent. It was built in 1891. Illustrated here is a replica of one of the old street cars which clattered along the streets fifty years ago. Beside it, from left to right, are Clayton York, originally a motorman and now a car barn employee; Dan Reid, formerly a conductor and now traffic superintendent; R. B. Chandler, manager of the Port Arthur Public Utilities Commission; and Jack Smith, "Roadmaster".



Around the Hydro Circuit

Known for the prominent and progressive part he has played in the development of Hydro, **Fred Biette** of Chatham was born in 1866 at Newcastle, Ontario.



Fred Biette

He joined the staff of the Western Bank at Oshawa in 1883, and served there and later with the Standard Bank until July, 1923. After having been in this business over 40 years he was retired on pension, owing to ill health.

When Mr. Biette came to Chatham as manager of the Standard Bank in 1916, he took a keen interest in public affairs, and especially in the Board of Trade, while he was instrumental in organizing the Chatham Golf Club in 1918, and was its first president. He also took a prominent part in bowling and other sports.

Mr. Biette was first elected to the Chatham Public Utilities Commission in 1926, and has served continuously ever since, receiving many terms by acclamation. He was chairman of the Commission for a number of years, and was keenly interested in the development of Hydro in Chatham and, among other things, advocated an underground primary distribution system. Today there are more than 15 miles of underground cable in service. At the same time, Mr. Biette has studied and supported any improvements which would increase the efficiency of service to the consumers.

He has served on the executive of the Ontario Municipal Electric Association for the past 14 years, and is now an honorary vice-president.

Although retired, he has not entirely given up municipal life. For many years he has been clerk, treasurer, tax collector and assessor of the village of Erie Beach where he maintains a summer home.

W. C. KARN IS APPOINTED METER DEPARTMENT HEAD

Appointment of W. C. Karn as superintendent of the Meter Department has been announced by E. V. Buchanan, general manager of the London Public Utilities Commission. He succeeds W. J. Jackson, who retires on pension after 32 years' service.

A native of Embro, Mr. Karn joined the Meter Department as an apprentice in 1913 and became chief meterman in 1920. He has been actively identified with the Western Ontario Electric Meter Association since its formation, and was president in 1936-7. His hobby is lawn bowling.

UNDERGOES OPERATION

Wishes for a speedy recovery are extended by the many friends and business associates of John Kalte of Hanover, honorary vice-president of the Ontario Municipal Electric Association. Mr. Kalte has been ill for the past three months, and has been confined to the Victoria Hospital at London, having undergone a major operation recently. He is reported to be doing well.

When Hydro was first installed in Grand Valley in 1916, the Reeve of the Village was **Alfred Menary**, who for the past 12 years has been Secretary-Treasurer of the Grand Valley Hydro-Electric System.



Alfred Menary

Born in Amaranth Township, Dufferin County, in 1883, where he received his education, Mr. Menary devoted himself to agriculture. In 1911 he was elected Deputy Reeve of the Township and, during the same year, moved to Grand Valley. He has been closely connected with the progress of the village since that time, serving in various capacities.

Mr. Menary was Reeve of Grand Valley from 1916 to 1918, and during 1918 was Warden of Dufferin County. For about four years he operated a hay business and garage.

He has been Secretary-Treasurer of the Grand Valley Hydro-Electric System, and Clerk and Treasurer of the Village since 1930. In 1940 he was elected President of the Georgian Bay Association.

Active in fraternal societies, and a fair hand at bowling and curling, Mr. Menary prides himself on his Irish ancestry.

DISTRICT No. 7 CHAIRMAN

Percy R. Locke, chairman of District No. 7, O.M.E.A., was virtually raised in the shadow of Hydro progress. Among his fondest memories are his early days around the old Locke Homestead and farm, where he was born in 1900.



Percy R. Locke

After graduation from public school and collegiate institute, Mr. Locke worked on his father's St. Thomas farm, which was one of the first in Elgin County to install Hydro, the precise date being May, 1912. The Locke farm also owned the first grain grinder operated by Hydro in Ontario, and a treasured recollection is that Sir Adam Beck, on his visits to the district, often referred to this as the "Hydro Farm".

Mr. Locke has been associated with the insurance business since 1928, and has been very active in fraternal society and service club work in St. Thomas.

In addition to holding the Chairmanship of his District O.M.E.A., Mr. Locke is Chairman of the O.M.E.A. Power Conservation Committee, and a member of the Municipal Hydro-Electric Pension and Insurance Committee.

Like many colleagues in the electrical field, Mr. Locke finds athletic self-expression on the golf course.

KILLED IN ACTION

Pilot Officer Erle W. Ollen-Bittle, son of W. A. Ollen-Bittle, industrial engineer on the head office staff of the Commission, is reported to have been killed in action over Egypt on July 16.

UNEMPLOYMENT INSURANCE

After many months of effort by the Ontario Municipal Electric Association, with the co-operation of the Department of Municipal Affairs and the local Hydro and public utilities commissions, the Association, it is announced, has succeeded in securing a ruling from the Unemployment Insurance Commission to the effect that employees of local Hydro and public utilities commissions and committees are in excepted employment.

Copy of the memorandum from the Unemployment Insurance Commission has been sent out by the Association to all local commissions, and they are asked to file with their closest Unemployment Insurance Commission office a list of all employees who may be considered permanent. Those whose employment is definitely casual or temporary should hold Unemployment Insurance books, and stamps should be purchased for them.

PAYS TRIBUTE TO O.M.E.A.

The following letter has been received by the secretary of the O.M.E.A. from R. J. Gauthier, secretary-treasurer of the Penetanguishene Water and Light Commission:

"In reply to your communication of July 20, we wish to express thanks on behalf of our staff and the Commission for your unceasing efforts in obtaining exception to the Unemployment Insurance. This is another of the many instances when the Association has more than proven its worth to local commissions."

"VALLEY TOWN" BOOSTER

District No. 5 will hold the fall convention in Dundas, and, if at all possible, the members of the outlying districts should make an effort to come to this Valley Town and see why it is called 'The Hub of Hydro,' says George Austin, secretary of District No. 5.

"Dundas," he states, "is historically known as the Valley Town because it is in the valley. Its hillside offers the finest scenery that can be seen for many miles, and a day here is worthwhile. We have also the oldest and most modern foundry and machine shop in Ontario."

Mr. Austin indicates that the convention is tentatively scheduled for the first week in October.

DISTRICT NO. 6 CONVENTION TO BE HELD AT GALT, SEPT. 2

President H. O. Hawke and his executive are very active these days in planning what promises to be an interesting programme for the District No. 6 O.M.E.A. convention to be held at Galt on September 2. The principal speaker is described as "something different" and the subject "very timely". Mr. Hawke intimates that provision is being made to allow plenty of time for discussion periods. The programme will also include visits to a number of interesting places in the district, including Galt's naval and aircraft schools.

CLOSE FIGURING

Barrett Chute main dam has exactly 61,974 cubic yards of concrete in it. The mixing plant has two two-yard mixers dumping into a central hopper feeding on to a 24-inch conveyor belt 1,200 feet long. The whole layout was designed on a basis to pour 60 yds. of concrete per hour. The actual pouring of the dam took about 66 days or 1,600 hours (net). This gives an average for the whole dam of 39 yds. per hour. The dam was actually poured between April 21st and November 10th, except for the closures. At the peak of the job, during the Summer of 1941, the pours ran more or less continuously, and the rate of pour was about 48 yds. per hour. Actually 32,146 yds. were poured in 61 days (525 yds. per day). Of special interest, one continuous pour of 3,160 yds. was poured at the rate of 66 yds. per hour.—Construction News.

PHILO D. BATES, RIDGETOWN, SUCCUMBS TO HEART ATTACK

Philo D. Bates, chairman of the Ridgetown Public Utilities Commission, died suddenly on August 4, at the age of 46. He suffered a heart attack while on a fishing trip in the Temagami district, where he was spending his vacation.

Mr. Bates was the founder and owner of the Bates Manufacturing Company of Ridgetown. A prominent figure in community life, he was past president of the local branch of the Canadian Legion.

Surviving are his widow; one son, John; two daughters, Ruth and Laurabelle; his father, Fred D. Bates; and one brother, Harold D. Bates.

ROBERT H. MYERS PASSES

Robert H. Myers, one of Stratford's most active public servants, passed away recently following a lengthy illness. Born in Leeds, England, in 1852, he came to Canada as a child when his family settled near Goderich, later moving to Stratford.

Mr. Myers entered the service of the City of Stratford in 1896 as chief of the fire department, a position he occupied for 14 years. In 1910 he became secretary-treasurer of the Stratford Light and Heat Commission, and when that body was amalgamated with the Water Commission in 1915 under the name of the Public Utilities Commission, Mr. Myers remained in that office. He retired from active service in 1933.

Affectionately known to his colleagues as "Chief", Mr. Myers had vivid recollections of the early days of Hydro in Stratford. He often recalled the inaugural ceremonies in 1910, when the switch was closed on Christmas Eve by Mayor W. S. Dingman, in the presence of other members of the Commission who looked on in breathless excitement.

Mr. Myers was prominent in Church affairs, serving at one time as choir master and organist, and was active in fraternal societies.

A familiar figure at Hydro conventions for many years, Mr. Myers will be greatly missed by a wide circle of friends.

Regulations Will Affect "Power Shortage Areas"

Conservation System to be Equitable, Commissioner J. Albert Smith Declares At District No. 8 O.M.E.A. Convention--Resolution Urging Switch Standardization Approved

UNPRECEDENTED demands for power by essential war industries made it necessary to plan a programme of conservation to meet an estimated shortage of more than 250,000 horsepower this fall and winter, commissioner J. Albert Smith of The Hydro-Electric Power Commission, told the delegates to the recent District No. 8 O.M.E.A. convention at Windsor.

The conservation regulations, which are being announced by the Power Controller, become effective during September, stated the Commissioner who spoke on the subject, "Power for Victory".

Held at the Prince Edward Hotel, the convention was attended by a large gathering of delegates, including representatives from the Windsor City Council, Chamber of Commerce, local service clubs, and various outside centres.

Highlights of the meeting, consisting of morning and afternoon sessions, were the address by Commissioner Smith, the adoption of a constitution for District No. 8, O.M.E.A.,

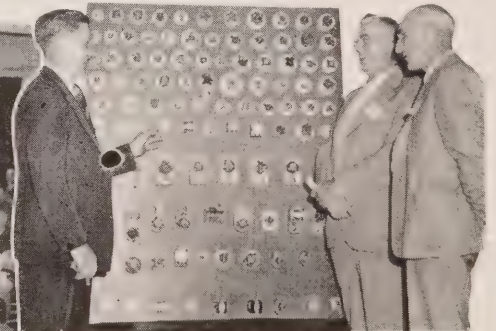
and presentation of a paper by Fred Rhoads, merchandising manager of the Windsor Hydro, calling for the standardization of electric range switches.

Mr. Smith revealed that the new power conservation regulations would apply to any designated "power shortage area", and that because of its wide-spread industrial network, Southern Ontario, he said, would be affected more than any other area.

Must Be Prepared

"The discharge of our responsibility to the Province and to the nation has become a patriotic duty of the first magnitude," said the Commissioner, "and we are exerting every effort to discharge that duty faithfully and speedily."

Stating that Hydro must be prepared to meet every essential request for electric power, no matter how great or how small, the speaker added, "Our war industries must be kept running to capacity. To do so requires a steady flow of

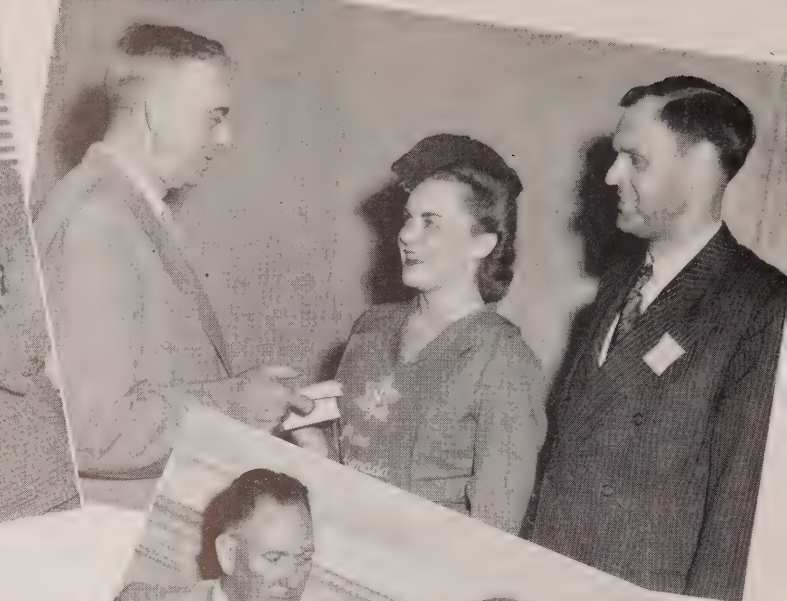


Top:—Fred Rhoads, merchandising manager, Hydro Division, Windsor Utilities Commission, is shown with Garnet Edwards and A. P. St. Louis, president and vice-president respectively of District No. 8 O.M.E.A. as the trio exchange repartee in front of a board on which are displayed various types of switches.

Left:—Commissioner J. Albert Smith of The Hydro-Electric Power Commission of Ontario, is shown speaking at the convention luncheon of District No. 8, O.M.E.A., in the Prince Edward Hotel, Windsor.



Exchanging greetings (above) are from left to right, J. Clark Keith, general manager, Windsor Utilities Commission; Kenneth A. Christie, K.C., Toronto, president of the O.M.E.A.; G. N. Galloway, chairman of the Sarnia Hydro-Electric Commission; and A. P. St. Louis, Riverside, vice-president, District No. 8, O.M.E.A.



"Miss Canada" in the person of Miss Mildred Lankin was very active at the District No. 8 O.M.E.A. convention at Windsor where she sold many War Savings Stamps. She is shown (upper right) making a sale to Garnet Edwards, president of District No. 8, while Gordon L. Sharpe of the Chatham Public Utilities Commission smilingly looks on.



Some problem was under discussion when the camera-man caught this trio. They are, left to right, R. S. Reynolds, manager and secretary of the Chatham Public Utilities Commission; commissioner J. Albert Smith of The Hydro-Electric Power Commission of Ontario; and R. T. Jeffery, chief municipal engineer of The H.E.P.C.

hydro-electric power, day and night, seven days a week. Hydro holds the key to Ontario's war effort. Restrictions on non-essential uses of electric energy would make available additional power supply to harness munitions plants, ship-building yards, tank and gun factories, military training camps, and scores of other centres contributing in one way or another to the prosecution of the war effort."

Mr. Smith said that a power shortage of approximately 250,000 horsepower is anticipated in Southern Ontario by next December, and that in order to cope with this situation ways and means are being worked out to establish an equitable system of conservation, on the basis of "first things first".

The initial restrictions, which will become effective this September, are expected to apply to exterior and interior lighting; show window and showcase lighting; outline and ornamental lighting; lighting for decorative or advertising purposes; outdoor and flood lighting, including field lighting for amusements and sports; white-way lighting; operation of air heaters or electric grates in stores or office buildings; and also a limited curtailment of street lighting.

At another point in his address Mr. Smith dealt with the Commission's wartime policy regarding rural extensions. He stated that when the present war began, rural Ontario was the best electrified farming area in the world and for nearly two years since the outbreak of war the Commission pursued its normal policy of expansion. However, because

of the growing scarcity of the aluminum, copper and steel used in extensions of this nature, the Commission was instructed by the Dominion Power Controller to discontinue construction for rural purposes.

Aid Research Work

The commissioner acquainted the meeting with other war-time activities of the Commission in these words:

"The generation and distribution of electric power for war industries engage most of the thought and energies of the Commission and its staff, but wherever and whenever the opportunity presents itself we are co-operating in a number of other ways in aiding the production programme. We have placed engineering designs and technical assistance at the disposal of the Government and war industry, have assisted in the design and construction of distribution systems for airports and war plants, have undertaken the testing and inspection of war materials for the Canadian and British Governments, and have loaned members of the staff to the Government to aid in special research work. The facilities of our machine shops have contributed in no small way to the 'Bits and Pieces Programme', the work ranging from the production of $\frac{1}{2}$ " studs and turning the noses on armour-piercing shells to the machining and boring of castings for marine engines."

Continuing, Mr. Smith said: "Hundreds of the Com-

(Continued on page 21)



DISTRICT NO. 6, O.M.E.A. CONVENTION PROGRAMME

Plans have been completed for the convention of District No. 6, O.M.E.A., at Galt on September 2. Members of the executive of this district are: H. O. Hawke, Galt, president; executive committee, F. H. May, St. Marys; F. E. Welker, St. Jacobs; George Eiffert, Tavistock; A. Y. McLean, Seaforth, secretary-treasurer, H. R. Hatcher, Galt.

The programme has been announced as follows:

- 9.30 A.M. Registration, Iroquois Hotel.
- 10.00 A.M. General Meeting.
Secretary-Treasurer's Report
Election of officers.
- 11.00 A.M. Discussion period.
- 12.30 P.M. Luncheon, Iroquois Hotel.
Address by Dr. Thomas H. Hogg,
Chairman and Chief Engineer, H.E.P.C.
- 2.00 P.M. General discussion.
- 3.30 P.M. Visit to Galt aircraft schools.
- 6.30 P.M. Complimentary banquet tendered by the
Public Utilities Commission of Galt.
D. W. McCormick, Chairman.
Address: "England at War" by Miss El-
linor Fell, recently from England.
"God Save The King".

Role of Electrical Utility

(Continued from page 8)

involved in the supply and billing of such power. The main factors are demand, energy consumption, load factor and power factor. A study of these factors makes it evident that the cost of power can be held to a minimum, and the most efficient use made of available power by:

1. Keeping the peak demand at a minimum.
2. Maintaining a high load factor.
3. Maintaining a high power factor.

In a power conservation program, the electrical utility should endeavour to play its part in bringing these factors to the attention of its industrial consumers, and in assisting them to operate their plants with the minimum of power consumption and the maximum efficiency, consistent with their manufacturing problems. Industrial operators, operating under war pressure, frequently overlook the question of peak demand. By discussing conservation with them, it is possible to bring to their attention such simple matters as making sure that all motors are shut down when machines are not in actual production, that all unnecessary lights are turned off during the day when natural lighting is sufficient, and that all motors are operating under the maximum load at all times.

Frequently, a discussion with the plant operator or superintendent, enables the operation to be made with as uniform a demand as possible, and, by extending the hours of use, to obtain high load factor. An example of this might be the operation of electric furnaces at night, or at low peak periods during the day.

The improvement in plant power factor is one conservation measure which can show substantial savings, not only in power consumption, but as well, in essential materials. Any substantial reduction in total Kv-a. supplied through power factor improvement, means that the customer can add more load to his existing transformer, switching equipment, and feeder circuits, and frequently eliminates the necessity for purchasing new and larger equipment. Not only is this effect felt by the consumer, but it reacts in a similar manner in respect to the equipment of the utility itself.

Improvement in power factor means that the utility can supply more useful power from existing generating equipment, and can transmit that power to greater advantage through existing lines and transformers, thereby saving essential and critical material.

One of the chief causes of low power factor in an industrial plant is under loaded induction motors. By assisting industrial management to make a survey of its situation in this respect, considerable saving can result. Every plant should have a complete listing of its motors, and of their loading. With this information in hand, it is often possible to considerably improve plant efficiency and power factor by a simple re-arrangement of motors within the plant.

Genuine Conservation

Co-operation between the industrial management and the utility in this manner, provides a genuine program of conservation, not only of power and energy, but of material and equipment. Undoubtedly, it should play some part in any conservation program of the electrical utility system.

The electrical utility today, in common with all other industry, is restricted in the equipment and material which it can obtain for extensions of its system. It is, however, impossible for these imposed restrictions to supply the complete answer to the question of conservation of materials. Strict observance of the regulations imposed by controlling bodies is necessary, but, if the utility system is to do its best in winning the war, it means doing a little more than the law requires, and doing it a little faster and a little

(Continued on next page)

better. The English slogan, "It all depends on me", expresses the attitude which all industry should adopt. The spirit in which conservation of material is carried out counts as much, if not more, than the actual obedience to restrictive orders.

Since power conservation requires practically complete restriction of expansion in non-essential load, the requirements of the electrical utility in many classifications of material and equipment, becomes less. A reduction in stock of this type of material is therefore possible, and excess stock, which may be held, should be used to the best advantage, and made available by the utility wherever it will assist in saving critical supplies. In the United States, as well as in Canada, the authorities are endeavouring to obtain reports from electrical utility systems on their excess stocks of wire and other materials. Catalogues of such stocks are being prepared, and likely will be available to all electrical utilities. This will enable the utility systems to meet many of their demands for material and equipment of this type without drawing on the manufacturing facilities of the country. It is a problem in which the electrical utility systems should participate whole-heartedly, and endeavour to conserve by pooling their idle material and equipment for general use.

Many materials are now almost impossible to obtain, and the electrical industry is faced with the problem of substituting less critical material. The electric power organization can take an important part in this program, both from the standpoint of the substitution of material, and also from the standpoint of adopting temporary and less demanding standards of construction during the war period. The present situation requires a compromise with normal high standards in order to provide essential operation at a critical time without the absorption of scarce material and equipment difficult to obtain.

In any consideration of the conservation of material during war, it is evident that saving must be immediate. In other words, economies, which are planned to produce results in the future, are not as effective as those which provide immediate savings. Consequently, the holding of excess supplies of materials which are urgently required elsewhere, does not assist in making available now, the material required by war industry. Here, the electrical utility may assist by reducing its stocks to the minimum required for essential operation and maintenance and by making available any excess stock to others that may be urgently in need of it.

Saving Increasingly Important

With all industry crying for material, it seems self-evident that the feeding of scrap back into the production line consistently and quickly, is a further conservation measure. Utilities are large users of copper and other short metals. Today the saving of all becomes increasingly important. Equally important is the continuous moving of such scrap into the processing manufacturers' plants through authorized dealers. Scrap material is more valuable now, than it would be if held for six months.

The electrical utilities of Canada are playing a very important part in Canada's war program. They have before them many problems, relating both to the conservation of

(Continued on page 20)

BLACKOUT METHODS

The simplest, least expensive, and most quickly-provided means for blackout of street lighting involves the co-operation of the local air-raid wardens, says George A. Eddy, writing in *Distribution*, published by General Electric Company.

A weather-proof, key-operated or padlock switch is installed at each control point, to be operated by the warden in event of air-raid alarm. The method is adaptable to any type of lighting system; a multiple system will simply involve more switches than a series system and hence will require the services of more wardens.

Admittedly the method has drawbacks; it involves a great many people who are not utility or city employees and whose actions may be somewhat unpredictable. On the other hand, it has apparently worked well in practice blackouts where the lighting systems have been equipped with simple, positive means for control and the wardens have been adequately instructed.

Remote Control Methods

Notwithstanding the simplicity and economy of this method, there are obvious advantages in keeping control of the street lighting in the hands of utility employees insofar as practical. The present-day scarcity of materials is such that an extensive remote-control system to accomplish this may be out of the question. On the other hand, possibly the application of one or another of the remote-control schemes will simplify the control or reduce the number of persons required to obtain a blackout. We should, therefore, consider some of the commonly used remote-control methods for street lighting.

The remote-control methods most easily adapted to series lighting systems, continues Mr. Eddy, are (1) Pilot wire and relays; (2) Cascade control.

The pilot-wire-and-relay system requires one or several low-voltage circuits emanating from the control point. Suitable relays are connected to these circuits to actuate the coils of the oil-switch controllers for the constant-current transformers. The relays are almost always necessary if many transformers are to be controlled. Circuit voltage will normally be 120 volts, and the circuit should not be so long as to produce excessive voltage drop at the farthest relay. On very long circuits it is possible to re-energize from a nearby secondary by cascading with another relay. A standard multiple-street-lighting remote-control switch makes a satisfactory relay for this service.

Two-Wire Circuits

A single-conductor pilot circuit is possible if it is easy to get good grounds at the relay locations. However, for most construction, 2-wire circuits with suitable transpositions on overhead circuits to minimize induction, seem better. Normally open relays are best for blackout control. We must consider that an actual bomb attack may knock down portions of the pilot circuit; therefore, normally open relays must be used so that the failure of control power will cause the lighting to be extinguished.

(Continued on page 20)

Role of Electrical Utility

(Continued from page 19)

power and to the conservation of material. In many cases, these problems can only be solved by technical knowledge and ability. Therefore, a challenge is placed before the engineers of Canadian utilities to assist in solving these problems. Utility engineers are accepting this challenge, and working hard to find solutions. If these problems are met with the inspiration of the phrase "It all depends on me", the electrical industry will be proud of its record when the war is over, and the Victory won.

Blackout Methods

(Continued from page 19)

Cascade control involves connecting the operating coil of the oil-switch controller (or a suitable relay) into an adjacent circuit which is subject to manual control. As the manually controlled circuit is turned on, it automatically turns on the next circuit—a process that can be carried on in as many stages as desired. Ordinarily this system is not highly regarded by operating engineers because of the

vulnerability to circuit outages; failure of one series circuit will turn off all circuits cascaded from it. Therefore, this type of control should be used only if the series circuits are—or can be put in—excellent electrical and mechanical condition.

SCRAP RUBBER CAMPAIGN IN RURAL DISTRICTS

Rural postal authorities will co-operate in a scrap rubber collection campaign to be conducted between August 24 and September 8.

During that time, patrons of rural post offices are asked to collect all their scrap rubber and take it with them when they call for their mail. Rural boxholders are being advised to place any scrap rubber under the mail boxes so that it can be collected by the rural couriers. Contractors and plant electricians in districts where mail is not delivered are urged to take scrap to their local post offices.

Rural couriers, stage couriers and post office officials are giving their services to help Canada meet this urgent need.

Speeding Plans for Hydro's War Effort



One of the drafting rooms in the Head Office Administration Building of The Hydro-Electric Power Commission of Ontario where designs are prepared for generating and transformer stations. Note the fluorescent lighting which for many months has been used extensively on night work to expedite construction for the supply of power to war industries.

REGULATIONS AFFECT

(Continued from page 17)

mission's employees are serving in the armed forces, many with the Royal Canadian Engineers. Others have become officials and instructors in the Civilian Defence Corps. Practically all members of the staff are performing war service work, purchasing war certificates and bonds, and devoting their energies to patriotic societies in providing comforts for the men in the service.

"The facts show that the Commission has recognized its duty and responsibility by serving the best interests of the people in time of war as it did in the days of peace. You may be able to form some conception of the vital role Hydro is playing when I tell you that upwards of fifty million dollars have been, and are being expended by the Commission almost entirely on what could be termed war expansion in Southern Ontario."

In conclusion, Mr. Smith made reference to problems of the future and stressed the importance of building up financial reserves today to enable the Commission to maintain a position of stability in the post-war transition period.

Standardization of Switches

At the outset of his address on "The Standardization of Electric Switches", Mr. Rhoads declared: "While a discussion of the problems encountered in servicing electric ranges though lack of standardization of switches might, at first glance, seem out of place before a body of municipal commissioners whose duties are more concerned with matters of administration and policy, the gravity of the situation which is rapidly arising merits the serious attention of all Hydro commissioners."

"The accepted Hydro policy of service to the people", continued the speaker, "is not only to provide adequate supplies of power to maintain a high standard of service but to so utilize the supply that maximum benefits be achieved both in economy and convenience. Early in Hydro history the domestic electric range was developed as the most likely appliance to serve the needs of the consumer and the best interests of Hydro. As a result, an active and very successful promotional campaign was instituted and we find today that there are in Ontario more electric ranges in service than in any similar area in the world. Much of the success of the promotional effort can be traced to Hydro's acceptance of responsibility for servicing electric ranges. But this responsibility has been rendered difficult by a complete lack of standardization of range switches. Now we are at war and restrictions on production for civilian use have further aggravated the switch situation to the point that, unless something definite is done in the near future, serious inconveniences will be experienced in the majority of houses in Ontario where the electric range is the only cooking method in use for war workers."

Mr. Rhoads declared that there were nine or more different range manufacturers serving the Canadian market, and that each of these ranges required a different type of switch. In the use of these switches the results obtained were identical—a variety of heats in the burner. "A standard switch", he continued, "would produce the same result and would be much cheaper. One manufacturer produces three different

switches and the only difference to be found is in the mounting, with the terminals being run through a different hole, while the price varies as much as \$1.00. It is my contention that a switch produced by the same firm should be produced for other manufacturers at the same price. We do not wish to interfere in any manner, shape or form with the manufacturer in his production efforts. However, since every range being manufactured today has concealed switches, we cannot see why the switch cannot be standard. The public is not interested in what is behind the panels. Their only interest is in the operation of the range. The designing engineer may design any kind of knob he cares to, but it is to what this knob is connected that is of prime interest to us. If it were possible to secure these switches at an economical price and with little or no difficulty, we would have no objection whatever, but today in order to secure this equipment a priority rating of A1J is a necessity, a rating which, in almost every case, is difficult to obtain. This is only one of the difficulties."

Resolution Endorsed

Mr. Rhoads declared that vital material needed for war industries went into the manufacture of these switches and a great deal of this could be salvaged by producing a standard switch. The switch manufacturer would be better off. "The range manufacturer", he added, "makes no money on service parts, and we feel that a range should not have to be scrapped because of a switch."

Following Mr. Rhoad's address the following resolution was adopted unanimously on motion of J. C. Barr of Sarnia, and seconded by E. J. Blake of Chatham.

BE IT RESOLVED that District No. 8 of the O.M.E.A. recommends that immediate action be taken which will lead to the standardization of switches and that a committee consisting of the vice-president of each district be appointed to act with F. S. Rhoads of the Windsor Utilities Commission, Hydro Division, which committee shall institute an immediate and continuing programme towards switch standardization in co-operation with The Hydro-Electric Power Commission of Ontario and the proper authorities at Ottawa:

BE IT FURTHER RESOLVED that the secretary of District No. 8 O.M.E.A. be instructed to forward a copy of this resolution to the Standardization Bureau and the War-time Prices and Trade Board at Ottawa and to the executives of the seven other districts of the O.M.E.A. in pursuance with the W.P.T.B. Bulletin of February 1, 1942.

Among those taking part in the proceedings were Kenneth A. Christie, K.C., Toronto, president of the O.M.E.A.; H. O. Hawke, president, No. 6 District; Roy Pearson, director, No. 5 District; F. H. May, vice-president, No. 6 District; R. T. Jeffery, chief municipal engineer, H.E.P.C., and many others.

Garnet A. Edwards of the Windsor Public Utilities Commission, presided.

Publishers are invited to reproduce articles and items of interest from Hydro News. While pertinent material has been submitted for the approval of the censor before publication in Hydro News, we would remind editors that they must assume responsibility for reprinting.

Growing Power Demands

A total primary load increase of 19 per cent. for June, 1942 over the corresponding month last year is revealed in the monthly summary of loads compiled by The Hydro-Electric Power Commission of Ontario.

This increase, based upon the maximum 20-minute peak horsepower load for the respective months, covers all four Hydro systems and the Northern Ontario Properties, and reflects the ever growing demands of essential war industries.

The June, 1941, total peak demand was 1,795,135 horsepower as against 2,135,537 horsepower for June of this year. The Niagara System headed the list with an increase of 317,828 horsepower, or an advance of 25 per cent. over June of last year. Combined primary and secondary loads for all four systems and the Northern Ontario Properties totalled 2,243,312 horsepower for June, 1942, while the corresponding month last year showed a total of 2,054,813 horsepower.

A tabulation of the combined primary and secondary power loads for the respective months follows:

PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent.
	June, 1942	June, 1941	Increase
Niagara System	1,629,357	1,472,118	10.7
Eastern Ontario System	180,460	162,077	11.3
Georgian Bay System	48,760	42,689	14.2
Thunder Bay System	125,938	107,507	17.1
Northern Ontario Properties ..	258,797	270,422	-4.3
Total	2,243,312	2,054,813	9.2

The charts in the next column show the primary load month by month for the combined Southern Ontario Systems and also for the combined Northern Ontario Properties and Thunder Bay System. The increase each month is indicated by the white blocks.

TOIL IN FOREST

(Continued from page 9)

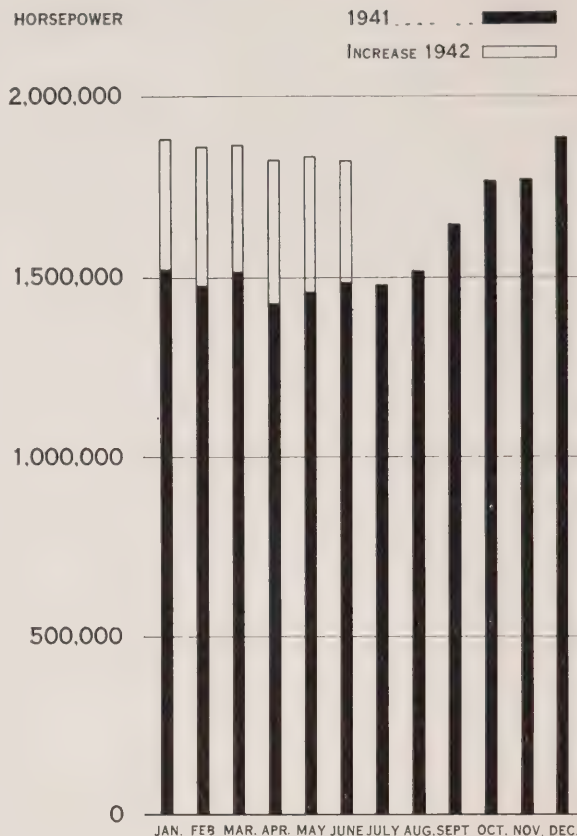
Despite the adverse circumstances under which repairs were carried out, the line was restored to service with remarkable speed, reflecting credit upon the men who stayed with the job until completion. The conditions under which they had to work were described as extremely hazardous. The heat was intense, and at each step a cloud of charcoal dust would rise from the ground, blackening the men from head to foot and making breathing difficult. All drinking water had to be boiled.

Work had to be done at the top of the poles amidst choking smoke and thick dust, but the men stayed with it from 14 to 17 hours a day. Most of those who did climbing suffered from leg sores caused by the rubbing of the spurs and the heat. One lineman had to have his legs treated for blood poisoning, while another suffered a sprained wrist and skin abrasions. But no man spared himself until his job was done and electric power once again went winging over the wires.

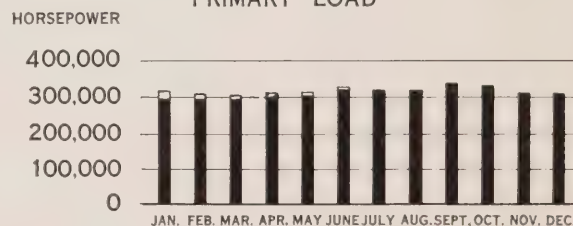
JOINS P.U.W.W.B.

In becoming identified with the Public Utilities War-time Workshop Board, the Toronto Hydro-Electric System has made the facilities of its machine shop available for the production of vital war materials under the "Bits and Pieces Programme."

SOUTHERN ONTARIO SYSTEMS PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



PRIMARY LOADS

Area served by	Maximum 20-Minute Peak H.P.		Per Cent Increase
	June 1942	June 1941	
Niagara System	1,586,595	1,268,767	+25.1
Georgian Bay System	48,760	42,689	+14.2
Eastern Ontario System	180,460	161,594	+11.7
Thunder Bay System	106,903	99,786	+ 7.1
Northern Ontario Properties.....	212,819	222,299	- 4.3
TOTAL	2,135,537	1,795,135	+19.0

MUNICIPAL LOADS, JUNE, 1942

NIAGARA SYSTEM 25-Cycle			Popula- tion		Popula- tion			
	H.P.	Popula- tion		H.P.		H.P.	Popula- tion	
Acton -----	1,590	1,903	Erie Beach -----	20	21	Palmerston -----	575	1,400
Agincourt -----	189	P.V.	Essex -----	543	1,886	Paris -----	1,661	4,604
Ailsa Craig -----	122	487	Etobicoke Twp. -----	6,409	V.A.	Parkhill -----	188	1,029
Alvinston -----	94	649	Exeter -----	719	1,654	Petrolia -----	947	2,768
Amherstburg -----	820	2,704	Fergus -----	1,411	2,759	Plattsville -----	120	P.V.
Ancaster Twp. -----	333	V.A.	Fonthill -----	144	860	Point Edward -----	1,565	1,199
Arkona -----	57	403	Forest -----	524	1,562	Port Colborne -----	1,696	6,772
Aurora -----	1,276	2,821	Forest Hill -----	6,510	12,172	Port Credit -----	735	1,934
Aylmer -----	784	1,985	Galt -----	11,085	14,584	Port Dalhousie -----	1,139	1,599
Ayr -----	246	760	Georgetown -----	1,761	2,452	Port Dover -----	480	1,790
Baden -----	508	P.V.	Glencoe -----	198	763	Port Rowan -----	99	700
Beachville -----	642	P.V.	Goderich -----	1,673	4,674	Port Stanley -----	843	824
Beamsville -----	418	1,227	Granton -----	79	P.V.	Preston -----	3,916	6,337
Belle River -----	171	836	Grimsby -----	750	1,988	Princeton -----	130	P.V.
Blenheim -----	487	1,873	Guelph -----	10,275	22,500	Queenston -----	169	P.V.
Blyth -----	143	662	Hagersville -----	1,140	1,347	Richmond Hill -----	460	1,295
Bolton -----	181	629	Harriston -----	417	1,292	Ridgetown -----	497	1,986
Bothwell -----	123	683	Harrow -----	509	1,092	Riverside -----	878	5,235
Brampton -----	3,128	5,702	Hensall -----	188	686	Rockwood -----	122	P.V.
Brantford -----	19,630	30,947	Hespeler -----	2,754	2,938	Rodney -----	139	758
Brantford Twp. -----	939	V.A.	Highgate -----	81	322	St. Clair Beach -----	102	138
Bridgeport -----	141	P.V.	Humberstone -----	503	2,831	St. George -----	153	P.V.
Brigden -----	80	P.V.	Ingersoll -----	3,018	5,186	St. Jacobs -----	307	P.V.
Brussels -----	132	784	Jarvis -----	214	513	St. Marys -----	1,496	4,009
Burford -----	254	P.V.	Kingsville -----	488	2,453	St. Thomas -----	7,510	16,461
Burgessville -----	49	P.V.	Kitchener -----	24,305	33,281	Sarnia -----	10,033	17,979
Burlington -----	1,464	3,925	Lambeth -----	104	P.V.	Scarborough Twp. -----	3,858	V.A.
Burlington Beach -----	482	1,474	LaSalle -----	228	907	Seaforth -----	764	1,782
Caledonia -----	323	1,430	Leamington -----	1,485	6,048	Simcoe -----	2,205	6,340
Campbellville -----	28	P.V.	Listowel -----	1,468	2,984	Smithville -----	142	P.V.
Cayuga -----	110	700	London -----	36,891	75,176	Springfield -----	66	382
Chatham -----	5,625	17,148	London Twp. -----	386	V.A.	Stamford Twp. -----	2,528	8,275
Chippawa -----	305	1,228	Long Branch -----	965	4,258	Stoney Creek -----	211	933
Clifford -----	96	491	Lucan -----	192	643	Stouffville -----	305	1,198
Clinton -----	630	1,879	Lynden -----	108	P.V.	Stratford -----	7,657	17,163
Comber -----	144	P.V.	Markham -----	367	1,175	Strathroy -----	1,483	2,834
Cottam -----	72	P.V.	Merlin -----	83	P.V.	Streetsville -----	216	701
Courtright -----	43	355	Merritton -----	8,894	2,916	Sutton -----	269	949
Dashwood -----	88	P.V.	Milton -----	1,320	1,915	Swansea -----	2,947	6,606
Delaware -----	74	P.V.	Milverton -----	355	994	Tavistock -----	690	1,080
Delhi -----	389	2,430	Mimico -----	2,218	7,713	Tecumseh -----	382	2,331
Dorchester -----	76	P.V.	Mitchell -----	737	1,670	Thamesford -----	198	P.V.
Drayton -----	143	528	Moorefield -----	32	P.V.	Thamesville -----	180	816
Dresden -----	355	1,525	Mount Brydges -----	92	P.V.	Thedford -----	99	598
Drumbo -----	120	P.V.	Newbury -----	27	288	Thorndale -----	85	P.V.
Dublin -----	37	P.V.	New Hamburg -----	634	1,441	Thorold -----	2,187	5,080
Dundas -----	2,764	5,001	Newmarket -----	1,846	3,800	Tilbury -----	1,213	1,923
Dunnville -----	1,110	3,916	New Toronto -----	11,429	7,514	Tillsonburg -----	1,192	4,602
Dutton -----	240	830	Niagara Falls -----	10,370	18,770	Toronto -----	323,191	648,098
East York Twp. -----	6,661	38,316	Niagara-on-the-Lake -----	868	1,764	Toronto Twp. -----	2,703	V.A.
Elmira -----	1,053	2,069	North York Twp. -----	7,203	V.A.	Wallaceburg -----	3,446	4,802
Elora -----	460	1,185	Norwich -----	457	1,301	Wardsville -----	30	221
Embro -----	121	420	Oil Springs -----	181	541	Waterdown -----	231	867
Erieau -----	102	281	Otterville -----	112	P.V.	Waterford -----	482	1,294
						Waterloo -----	5,165	8,690

MUNICIPAL LOADS, JUNE, 1942

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Watford	394	1,023	Mildmay	140	764	Kingston	12,497	26,741
Welland	12,171	11,568	Mount Forest	490	1,936	Lakefield	297	1,301
Wellesley	115	P.V.	Neustadt	38	431	Lanark	76	686
West Lorne	190	768	Orangeville	751	2,558	Lancaster	41	570
Weston	4,641	5,784	Owen Sound	5,344	13,599	Lindsay	3,754	7,241
Wheatley	170	761	Paisley	124	730	Madoc	185	1,130
Windsor	45,172	103,571	Penetanguishene	1,003	4,177	Marmora	114	1,004
Woodbridge	678	946	Port Carling	195	520	Martintown	33	P.V.
Woodstock	8,120	11,584	Port Elgin	530	1,415	Maxville	92	811
Wyoming	64	538	Port McNicoll	71	950	Millbrook	80	749
York Twp.	17,226	77,175	Port Perry	322	1,175	Morrisburg	208	1,484
Zurich	133	P.V.	Priceville	10	P.V.	Napanee	1,387	3,241
25 and 66-2/3 Cycle			Ripley	115	420	Newcastle	187	701
Hamilton	149,182	163,768	Rosseau	38	305	Norwood	126	710
St. Catharines	27,226	30,406	Shelburne	249	1,053	Omeme	101	630
Trafalgar Twp.	448	V.A.	Southampton	622	1,467	Orono	80	P.V.
66-2/3 Cycle			Stayner	352	1,106	Oshawa	15,917	25,035
Bronte	89	P.V.	Sunderland	78	P.V.	Ottawa	35,775	150,277
Oakville	839	3,869	Tara	101	510	Perth	1,774	4,197
GEORGIAN BAY SYSTEM			Teeswater	135	873	Peterborough	11,782	24,400
60-Cycle			Thornton	30	P.V.	Pictou	1,162	3,400
Alliston	370	1,700	Tottenham	83	532	Port Hope	2,335	4,997
Arthur	137	1,089	Uxbridge	316	1,480	Prescott	1,437	3,120
Bala	218	355	Victoria Harbour	65	979	Richmond	72	428
Barrie	4,168	9,521	Walkerton	1,035	2,534	Russell	63	P.V.
Beaverton	276	941	Waubaushe	105	P.V.	Smiths Falls	2,671	7,741
Beeton	126	617	Warton	273	1,750	Stirling	308	947
Bradford	290	1,041	Windermere	12	117	Trenton	5,074	7,636
Brechin	40	P.V.	Wingham	596	2,149	Tweed	271	1,181
Cannington	181	761	Woodville	54	439	Warkworth	69	P.V.
Chatsworth	72	333	EASTERN ONTARIO SYSTEM			Wellington	227	948
Chesley	614	1,812	60-Cycle			Westport	93	725
Coldwater	124	545	Alexandria	202	1,976	Whitby	1,477	4,236
Collingwood	2,601	5,636	Apple Hill	47	P.V.	Williamsburg	87	P.V.
Cookstown	88	P.V.	Arnprior	1,099	4,019	Winchester	324	1,017
Creemore	152	661	Athens	116	626	THUNDER BAY SYSTEM		
Dundalk	211	686	Bath	47	325	60-Cycle		
Durham	430	1,874	Belleville	7,224	14,876	Fort William	13,559	30,317
Elmvale	161	P.V.	Bloomfield	120	636	Nipigon Twp.	179	V.A.
Elmwood	66	P.V.	Bowmanville	2,682	3,850	Port Arthur	38,021	23,790
Flesherton	42	452	Brighton	318	1,462	NORTH. ONTARIO PROPERTIES		
Grand Valley	128	645	Brockville	4,648	10,463	Nipissing District		
Gravenhurst	1,048	2,261	Cardinal	363	1,602	60-Cycle		
Hanover	1,418	3,190	Carleton Place	1,866	4,143	North Bay	4,158	16,013
Holstein	11	P.V.	Chesterville	274	1,094	Patricia District		
Huntsville	1,094	2,943	Cobden	82	643	60-Cycle		
Kincardine	712	2,483	Cobourg	2,419	5,062	Sioux Lookout	298	1,967
Kirkfield	26	P.V.	Colborne	212	960	Sudbury District		
Lucknow	323	1,977	Deseronto	190	1,002	60-Cycle		
Markdale	186	776	Finch	103	396	Capreol	228	1,660
Meaford	676	2,759	Frankford	146	1,095	Sudbury	8,181	32,731
Midland	3,980	6,627	Hastings	96	823			
			Havelock	113	1,103			
			Iroquois	229	1,123			
			Kemptville	328	1,230			

MAN, WOMAN AND CHILD

IT IS ESSENTIAL THAT EVERY

TAKE A PART IN THE WAR EFFORT



THERE IS TOO MUCH

LOOSE TALK

ABOUT
NAVY, ARMY, AIR FORCE
& PRODUCTION MATTERS
IN CANADA

TO SERVE IN SILENCE IS
THE DUTY OF EVERY CITIZEN
IN OR OUT OF UNIFORM



On Guard

24 HOURS A DAY



HYDRO SERVICE

Carries On!

"Neither snow nor rain nor heat nor night stays these couriers from the swift completion of their appointed rounds."

Herodotus.

● When there's a storm, most people seek shelter, but that is when Hydro is busiest. Between darkness and dawn come hours of rest and sleep, but, with Hydro, every hour begins a new day.

Light for homes, hospitals and factories—heat for blast furnaces—or to cook meals in your home—energy to turn thousands of motors in factories, mines, shipyards—this is the work of your Hydro.

Hydro is helping to shorten the war. Over 1,000,000 Hydro-electric horsepower is at work on war materials.

Let us all be thrifty in our use of Hydro. New war plants must be energized and existing plants are constantly being harnessed to the war effort. Let war needs come first.

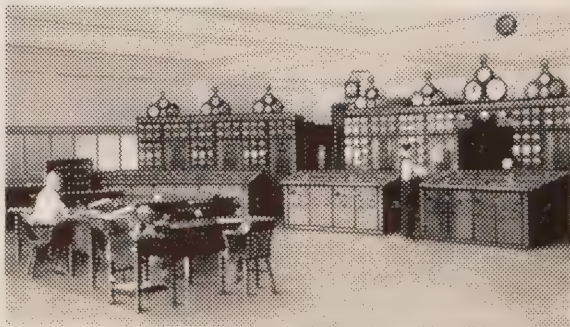
AN APPEAL TO THE HOUSEWIFE

You can do so much to save electricity. Don't let the kettle over-boil. Watch the switches on your electric range—turn out all lights when not needed. Resolve to save some current every day to help Ontario's war industries.



PICTURE AT RIGHT SHOWS A HYDRO CONTROL ROOM

Where the doors never close. Every hour of the day and night, every day in the year, watchful attendants are on the alert studying meters, keeping records and regulating the flow of Hydro current to consuming areas.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

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HYDRO

News

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HYDRO WORKER

VOL. 29

SEPTEMBER, 1942

NUMBER 9



RESTRICTIONS

in the use of

ELECTRICITY

Effective as of the 20th Day of September, 1942

The following are excerpts from Order No. PCS issued by the Dominion Power Controller, and apply to the use of electricity by and the supply of electricity to a person or persons in any area in Canada designated a Power Shortage area.

The area in Ontario designated as a power shortage area by the Dominion Power Controller is all that part of the Province of Ontario lying south of the line from Parry Sound, Ontario, to Huntsville, Ontario and from Huntsville to Pembroke, Ontario, including the municipalities situated on this line, which area is served by the Niagara, Eastern Ontario and Georgian Bay Systems of The Hydro-Electric Power Commission of Ontario and by a number of other electric utilities

SECTION 2. CERTAIN USES OF ELECTRICITY PROHIBITED

Except as provided in Section 3 next following no person shall use electricity for the operation in any Power Shortage Area of lighting or electrically operated equipment or installations for:

Interior or exterior sign lighting (whether commercial or non-commercial) but not including direction signs in stores and signs at the office or residence of a medical practitioner;
Interior or exterior show window and showcase lighting (but not including stock wardrobes);
Interior or exterior outline or ornamental lighting;
Interior or exterior lighting for decorative or advertising purposes;
Outdoor lighting and floodlighting,
provided however that the following shall be exempt from this subsection:

Such lighting of marquees or sidewalk canopies as is necessary for public safety up to but not exceeding one-half watt per square foot of floor or sidewalk area covered by such marquee or canopy;

Such exterior lighting of entrances to and exits from buildings as is required for public safety up to but not exceeding 5 watts per foot of width of such entrances or exits;

Such exterior lighting of the facilities of gasoline service stations as is necessary for the safe and proper operation of outside equipment up to but not exceeding 100 watts per active gasoline pump;

Lighting between the hours of 4.00 and 10.00 p.m. of outdoor skating rinks up to 1 watt per 100 square feet of skating surface;

Lighting for places where outdoor sports are carried on, subject to such restrictions as the

Power Controller may from time to time impose. The operation of any electric air heater or electric grate in a store or office building.

The lighting of any theatre, music hall or concert hall to an extent involving the use of not more than 40 watts per hundred square feet of floor area and the lighting of any entrance to or exit from such place or any passageway leading from the street to the body of such place to an extent not greater than is necessary for public safety

SECTION 3. USES EXCEPTED FROM SECTION TWO

The provisions of Section 2 next preceding shall not apply to lighting essential to the construction, operation, maintenance and repair of the following services:

Ordinary street lighting and lighting for traffic control and signal systems; provided that the power used for street lighting shall be reduced by at least 20% from that ordinarily used, except in areas which are lit by series arc lamps located more than 200 feet apart and that no street light shall be lit before one-half hour before sunset or after one-half hour after sunrise;

Signal or other lighting for police, fire or other public safety requirements or devices;

Lighting for war production plants;

Airports and air fields military training or other military purposes;

Hospitals and schools;

Urban, suburban and interurban common or contract carriers for passengers or freight, including terminals;

Railways, terminals and related facilities;

Generation, transmission and distribution of electric power;

Shipping on inland waters, including locks and terminals;

Oil pipe lines, refineries and pumping stations; Maintenance and repair yards or shops used exclusively for the maintenance or repair of transportation services;

Post offices;

Radio communications;

Telephone and telegraph systems;

Water supply and sanitation systems, including waterworks, pumping stations and sewage disposal plants and equipment;

Natural and mixed gas systems, including manufacturing plants, pipe lines, pumping stations and facilities;

Military establishments, including cantonments, posts, depots and fortifications;

News dissemination (but not for any advertising purposes)

If further clarification is required please contact your local Hydro office

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The Front Cover



"Hydro Worker" is the title of this month's front cover photograph released by the Director of Public Information. It is a striking character study of Michael Scott who has been working at the Barrett Chute development. Mr. Scott has been on the H.E.P.C. construction staff for many years, and was born in Ireland. He is known to his friends as "Mike".

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September 1942

Number 9

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A DAY DOWN EAST

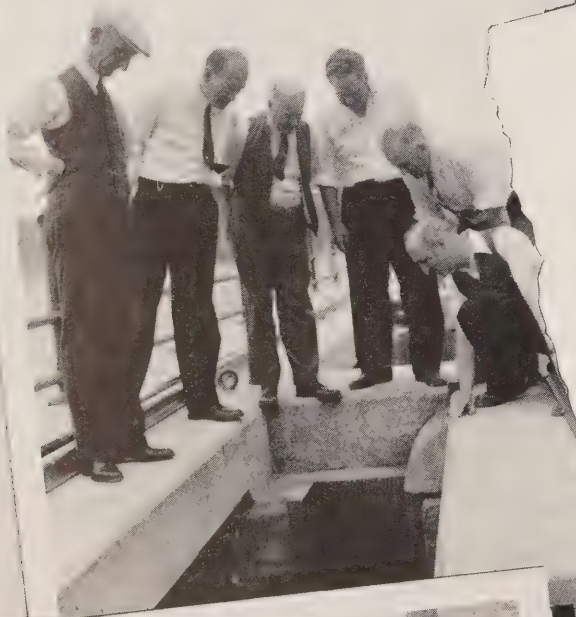
REPRESENTATIVES of Eastern O.M.E.A. districts paid a visit to Barrett Chute recently when they inspected the Commission's fine new plant which has added an additional 54,000 horsepower to the Eastern Ontario system.

Those taking part in the day's itinerary are shown in the top illustration. They are: back row, left to right: George E. Findlay, Carleton Place; M. P. Duff, Belleville; O. Cherry, Kingston; M. W. Rogers, Carleton Place; R. L. Dobbin, Peterborough; D. I. Nattress, H.E.P.C.; A. L. Malcom, H.E.P.C., Resident Engineer; E. T. Ireson, H.E.P.C. Front row, left to right: A. L. Farquharson, Brockville; J. Halliday, Kingston; W. B. Reynolds, M.L.A., Brockville; A. Richardson, H.E.P.C. Construction Superintendent; C. C. Folger, Kingston; G. A. MacDonald, Peterborough; G. F. Simson, H.E.P.C.

Members of the party (left) inspect a section of the massive main dam at Barrett Chute.

Bottom (left) Superintendent Angus Richardson explains certain construction features to a group of the interested visitors.

The majority of the O.M.E.A. representatives brought a healthy appetite with them and did full justice to the wholesome food served in the Hydro construction camp dining hall. "Mopping up" operations were proceeding when this picture (bottom right) was taken.



POWER FOR VICTORY ★

By Dr. Thomas H. Hogg

Chairman and Chief Engineer, H.E.P.C.

SINCE the outbreak of hostilities Hydro, on all its systems, until early this month, was able to keep pace with the ever-growing power demands from industries. This has been possible because we entered the war with a reasonable margin of reserves and have been able to augment our supplies by new construction and by purchase contracts.

Let me give you some idea of the amount of new power we have been able to feed into Southern Ontario since the outbreak of the war. Before the war started our highest peak load for Southern Ontario was in December, 1938, when it amounted to about 1-1/3 million horsepower. At that time we had an active reserve of 280,000 horsepower, or 20 per cent, and reinforcing this figure we had an additional 200,000 horsepower for future delivery, giving us a combined total reserve for future growth of about 35 per cent.

• • •

In addition to those reserves the Commission purchased further power and built new plants. Before the war we put into operation a new 10,000 horsepower plant at Ragged Rapids on the Musquash river, and we added an additional plant of 10,000 horsepower on the same river at Big Eddy, which went into operation last fall. By arrangement with the United States we were also able to increase our diversion of water at Niagara Falls from 36,000 to 50,000 c.f.s., giving us the equivalent of about 135,000 average horsepower in our existing plants. Further, in co-operation with the United States we are constructing a submerged weir above the Falls, which by the end of this year will have raised the water in the intake of our plants and increased their capacity by some 20,000 horsepower. We have also been able to purchase an additional 25,000 horsepower from the MacLaren-Quebec Company, increasing the purchase contract from 100,000 to 125,000 horsepower, and we have been able to obtain a further 57,500 horsepower from the MacLaren Company for the duration of the war. We have just completed the Barrett Chute development on the Madawaska river, which has a rated capacity of 54,000 horsepower. There is also a block of approximately 5,000 horsepower of purchased power from the Welland Ship Canal plant at Thorold.

• • •

Summarizing these amounts, you will find that we had planned reserves when the war started of 480,000 horsepower, to which we have added 286,500 horsepower, giving us a total of 766,500 horsepower, and next year we shall obtain 65,000 horsepower from the new DeCew Falls plant on the Welland Ship Canal, and 20,000 horsepower from the Niagara weir, giving us a total added, extra capacity of 851,500 horsepower over our pre-war peak load, or an increase of 64 per cent.

The Commission has discharged its responsibilities as far as it could by doing its utmost to provide as quickly

as possible new power resources and transmission lines to meet the ever-increasing load demands. You all know we were disappointed over the St. Lawrence project and how belatedly we had to turn to the Ottawa, but I am sure you will appreciate that by husbanding our resources in every other way, and by the expenditure of over \$50 million on new construction, we were able to meet the very heavy burden imposed upon us until this fall.

But in spite of our foresight in planning anticipated loads, the demand this month overtook the supply and during the coming fall and winter months we shall be faced with a power shortage in Southern Ontario which, without any restrictions, may be as large as 250,000 or 300,000 horsepower.

• • •

We had anticipated this shortage and expected that with our very slim reserves we would be able to get along without interruption until September 20th (when the Dominion Power Controller's restrictive order became effective). This new order, together with other plans we had made, we expected would have prevented any reduction of essential war loads.

Unfortunately, due to certain unforeseen increases in war loads, and aggravated by unfavourable weather and water conditions, we had to restrict certain of our large war load customers in the Niagara district by cutting about 100,000 horsepower over a period of three hours on two days. To prevent a repetition of this, we immediately asked all municipalities to co-operate with us by reducing their loads in every possible way.

The Dominion Power Controller's restrictive order has been announced and will, it is estimated, save about 100,000 horsepower in Southern Ontario. Unless the Dominion Power Controller imposes additional restrictions, our voluntary co-operative effort must save the remaining 150,000 to 200,000 horsepower during this fall and winter.

• • •

For some months past the Commission's staff has been preparing a publicity campaign, which is now in effect, to advise everyone how to "save Hydro and increase plane, tank and gun production". The details of this campaign will be explained to you, but I would like to point out how difficult it is to make and enforce restrictions in homes, offices and industry without a cumbersome and expensive office and police staff. We may have to come to this, but I am sure that all loyal citizens will co-operate by reducing their use of electricity in order that war industries may not suffer.

Let me illustrate how effective voluntary co-operation could be. We have in Ontario approximately 600,000 domestic customers whose average consumption is around 2,000 kilowatt hours per year. A ten per cent saving by these 600,000 customers would operate continuously, twenty-four hours a day, four plants equal in size to the largest machine-gun plant in the British Empire.

(*From the address delivered by Dr. Hogg at the Eastern Ontario Municipal Electric Association Convention at Brockville.)

Barrett Chute



This is Barrett Chute plant looking down from the headworks.

MARKING another noteworthy contribution to Canada's accelerating war production programme, the completion of the fine new five-million-dollar Barrett Chute power plant has set in motion two generators which are now feeding an additional 54,000 horsepower into Hydro's Eastern Ontario system.

The name of this new plant is associated with that of Margaret Fitzpatrick Barrett, better known as "Granny" Barrett, who made her home on the plant site many years ago. A present-day link with "Granny", who was widely

known and loved throughout the district, is to be found in the person of Mrs. Mary Ellen Box who resides in Calabogie. Although well over four score years, Mrs. Box is as alert and active as many women forty years her junior. From September, 1940, when the building of a four-mile road into the site marked the start of construction on the new development, Mrs. Box has followed the operations with keen interest.

A brick structure of soft, golden brown tint, designed to harmonize with its picturesque setting, the new power-

house is located eight miles southwest of Calabogie on the Madawaska river which is one of the main tributaries of the Ottawa. Rising in Algonquin Park and flowing southeasterly a distance of 190 miles, the Madawaska merges with the Ottawa at Arnprior. It drains an area of 3,300 square miles and drops 1,000 feet from its headwaters to the mouth, 665 feet of this fall occurring in the last 80 miles of its course. In the upper portion are many lakes which can be economically developed as storage basins.

Following a semi-circular course before entering the south end of Calabogie lake, the Madawaska tumbles through a series of falls and rapids comprising Chain Rapids, Ragged Rapids, High Falls and, lastly, Barrett Chute. The highest and most beautiful of these is High Falls where the river pitches through narrow gorges between pine-covered rock islands.

Massive Main Dam

One of the most arresting features of the new development is the massive main dam which required 62,000 cubic yards of concrete to complete. Towering 97 feet above the rock of the old river bed and extending for more than a quarter of a mile in length, it backs up the water through a canal to the headworks from which two penstocks slope down to the powerhouse. Cut through solid rock to the headworks, the canal, which is 2,400 feet long, and 38 feet wide with a maximum cut of 78 feet, presents a picture of arresting beauty. On either side of the dark, rippling waters which reflect dancing shadows cast by the sun, the rock walls sweep up to peaks of rugged grandeur along the course of this man-made channel. From the picturesque entrance to the canal the distant concrete headworks appear as a picture framed in rock.

Construction of this canal alone involved the removal of 150,000 yards of rock and 32,000 yards of earth and other stripping, while the total excavation for the canal, dam, penstocks, powerhouse and other structures was 210,000 cubic yards of solid rock and more than 100,000 cubic yards of other material. At the same time, an area covering

more than 700 acres, which will be flooded by the raised water levels above the dam, had to be cleared.

All the usable pine, spruce and poplar from the cleared area was sawn in the Hydro mills to provide timber and lumber for use on the job.

The penstocks, which carry the water to the two Francis type vertical shaft turbines, are 40 feet apart, and are embedded in rock and concrete throughout their entire 549-foot lengths. The diameter of each penstock is 14 feet.

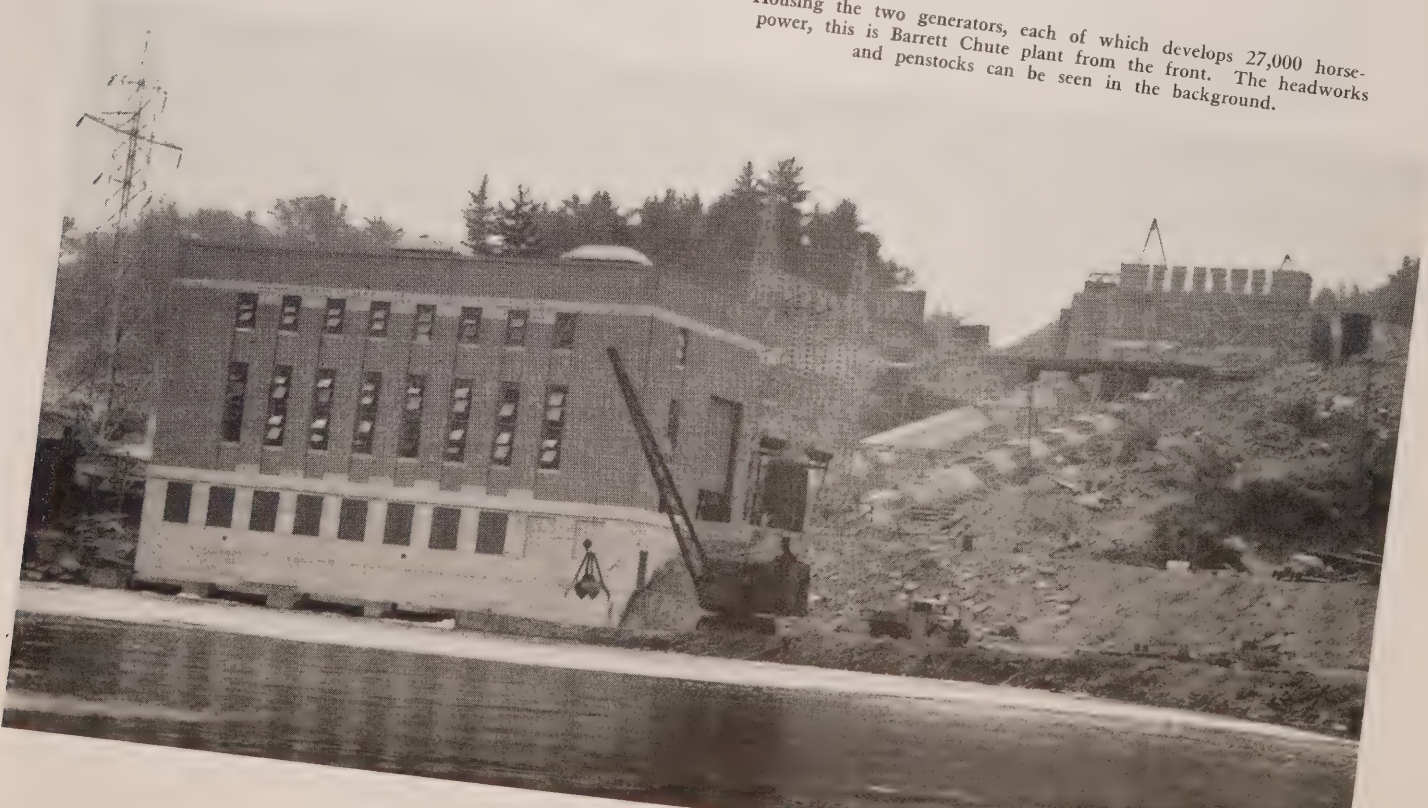
The district in which Barrett Chute development has been built was once famous for lumbering operations which involved extensive cribbing and flume construction to drive the logs over the rapids. However, no log drive of any size has been taken down the Madawaska river for more than 25 years so that only the decayed remnants of the original flumes and mooring cribs remain as evidence of the activities of these days.

300,000 Acre Feet of Storage

The waters of that river have now been raised for a distance of eight miles upstream as a result of the construction of the main dam. The forebay, including Mud lake, provides a head pond of 3,700 acres. For some years, the low water flow of the Madawaska has been augmented from storage on Bark lake where the Commission has constructed a new storage dam. An earthfill structure with concrete control section, this dam comprises five sluiceways of the conventional type and, at a lower level, four conduits 5½ feet in diameter controlled by butterfly valves. This new dam makes it possible to store water to a maximum depth of 30 feet, the total storage amounting to 300,000 acre-feet.

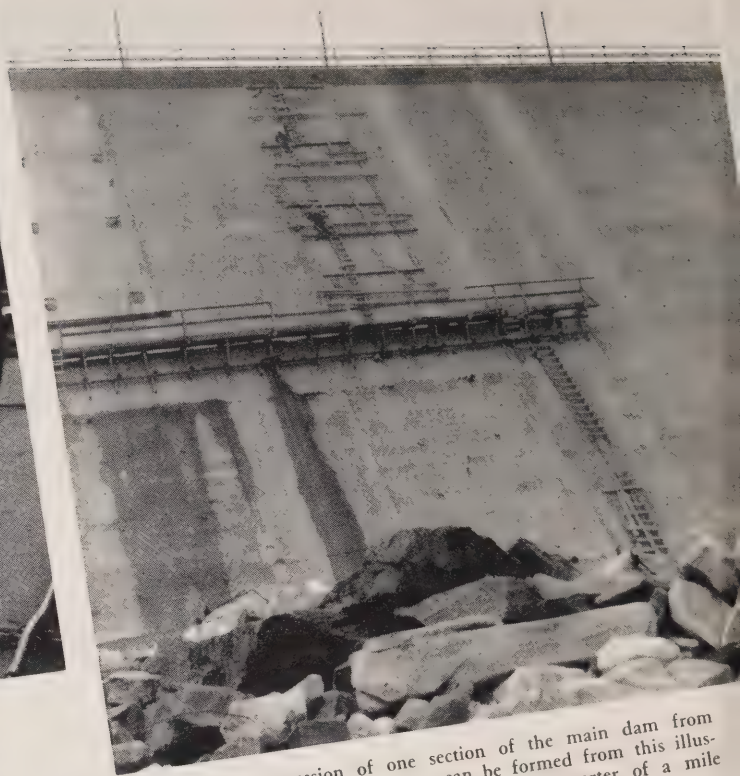
For its capacity of 54,000 horsepower Hydro's Barrett Chute plant is of moderate size, being only 104 feet long by 80 feet wide. The deep bay at the head of Calabogie lake affords excellent protection from the rough water of the Chute which is deflected from the tailrace by a natural rock ridge extending more than 200 feet downstream from the foot of the rapids.

Housing the two generators, each of which develops 27,000 horsepower, this is Barrett Chute plant from the front. The headworks and penstocks can be seen in the background.





One of the two generators installed in the Barrett Chute plant is shown here. These generators are of the vertical water wheel type with main and pilot exciters directly connected.



An impression of one section of the main dam from the bed of the old river can be formed from this illustration. This dam is more than a quarter of a mile in length.

Following the completion of the road into the site in 1940 when construction operations were started, the permanent camps and staff houses were rapidly built and were available for occupancy by the end of January, 1941.

Pumcrete Machines Used

Preparations for the construction of the main dam were made early in the spring of 1941, and by the middle of April of that year, the excavation for the foundation of the dam on the north bank of the river, next to the mixing plant, had been nearly completed. Coincident with this work, a cofferdam was built to take away the water from the south shore. Temporary sluices, erected in this area, were designed to pass the flow of the river during the construction of the major part of the dam which is a large mass concrete gravity type structure. Pumcrete machines were used to pour a total of 4,800 cubic yards for the diversion sluices and a four-cable suspension bridge was built from shore to shore to support the distributing pipe to the forms for these sluices.

In designing the Barrett Chute dam, provision was made for the collection of all leakage through the construction joints from the front of the structure.

An interesting phase of the construction on the dam was what is known as the pressure-grouting of the rock. The grout is made of a Portland cement base to which is added a lubricating agent to facilitate the flow of the substance into the fine cracks in the rocks. A mechanical mixer is used in preparing the grout mixture to which water is added until it has the consistency of a thin gruel. As soon as it has been mixed it is pumped into the grout holes, drilled in a row at 5-foot centres, about 2 feet in front of the dam. The grout pump is equipped with special valves and an extra strong rubber hose is used to carry the grout to the holes.

The same high quality of workmanship and attention to detail which are characteristic of the general construction of the new plant are also reflected in the erection and installation of the electrical units and equipment. The generators are of the vertical water wheel type with main and pilot exciters directly connected. Each unit generates 27,000 horsepower at 164 r.p.m. under a head of 150 feet. The two three-phase transformers step up the voltage from 13,200 to 110,000 volts. Low-voltage switching equipment is of the metal-clad type.

Occupying an area of approximately 40 feet by 18 feet on the first gallery in the plant, the switchboard comprises 13 control and metering panels and 8 relay panels. The general system of connection is that of connecting the generator through its own transformer to a high voltage ring bus.

At this new Barrett Chute plant, Hydro engineers have installed an automatic frequency and load control which is similar, in many respects, to the equipment used at the Queenston plant. Inter-connected with the plants at Chats Falls and with that of the Gatineau Power Company, as well as the Trent river plant, this control maintains a constant frequency and a pre-determined load balance.

The design and construction of the new development was carried out under the direction of Otto Holden, chief hydraulic engineer of the Commission, while the electrical portion was under the direction of A. H. Hull, electrical engineer of the H.E.P.C., and the construction work under David Forgan, construction engineer of the H.E.P.C. The resident engineer and superintendent are A. L. Malcolm and Angus Richardson respectively.

At the outset, approximately 600 construction men were on the job, while some 200 are now engaged in the remaining "mopping up" operations.

Around the Hydro Circuit

O.M.E.A. Districts Elect New Officers

To date election returns have been received from two of the eight O.M.E.A. districts. At the recent annual meetings of District No. 2 (Georgian Bay) and District No. 6 (North-Western Ontario), the following officers were named for the coming year:

District No. 2 (Georgian Bay)

President, R. D. Boyes, Alliston; 1st vice-president, J. R. Beaulieu, Penetang; 2nd vice-president, W. V. Brown, Meaford; secretary-treasurer, H. S. N. Denef, Hanover; directors: Dr. J. F. Marcus, Kincardine; G. F. Hutcheson, Huntsville; W. Dixon, Arthur; C. J. Halliday, Chesley; David Hurrie, Midland; W. G. Case, Owen Sound; J. A. Logie, Paisley.

O.M.E.A. directors will be named by the executive.

District No. 6—(North-Western Ontario)

President, H. O. Hawke, Galt; vice-president, F. H. May, St. Marys; directors: F. E. Welker, St. Jacobs; George Eiffert, Tavistock; W. P. Kress, Waterloo.

The secretary-treasurer and O.M.E.A. directors will be selected by the executive

A.M.E.U. Meeting To Be Held October 8

Instructive addresses directing attention to the problems of both large and small municipalities will be delivered at the annual meeting of the Western Ontario Accounting and Office Administration Division of the Association of Municipal Electrical Utilities.

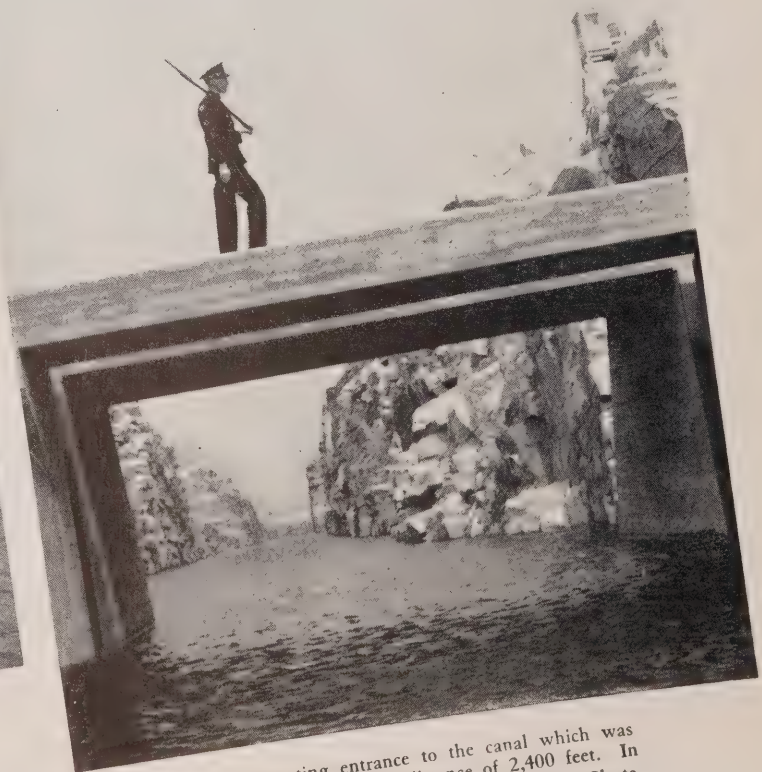
The meeting is scheduled for October 8 at Hotel London, London, registration to start at 11 a.m.

There will be a question period of one hour for the purpose of discussing the problems of any municipality, and a questionnaire is being sent to each office in the district. This action is expected to bring forth many subjects of interest.

Best wishes for a speedy recovery are extended to **Joseph J. Gibbons**, Chairman of the Toronto Hydro-Electric Commission, who is convalescing at the Lockwood Clinic, Toronto, following a serious operation. Mr. Gibbons' many friends will be pleased to learn that he is progressing very favourably.



Towering to a height of 97 feet above the old river bed, the massive Barrett Chute main dam (above) backs up the water through a canal to the headworks.



Here is the arresting entrance to the canal which was cut through solid rock for a distance of 2,400 feet. In the distance are the headworks of Barrett Chute.

Hydro Is Vital Force In Hastening Victory

Commission's Wartime Role Stressed By Dr. Thomas H. Hogg And Commissioner J. Albert Smith At Recent O. M. E. A. Conventions

HYDRO's primary wartime role is to keep pace with essential demands for power which will be utilized to speed the flow of equipment and supplies to our fighting forces and our allies, and thus help hasten the day of victory for all free peoples who may then set their hands and minds to the task of building a better world in which aggression, brutality and fear will have no place.

This, in brief, crystallized sentiments expressed by both Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., and Commissioner J. Albert Smith when addressing recent O.M.E.A. conventions.

Subjects which were to the forefront at these conventions included power conservation; the possibility of increasing generating capacity, and a study of the physical and economic advantages that would accrue if the Niagara, Georgian Bay and Eastern Ontario systems were amalgamated into one vast Southern Ontario network.

Dr. Hogg addressed the delegates to the convention of District No. 6 at Port Arthur, and Mr. Smith spoke before the meeting of District No. 2 on board the S.S. Assiniboia in Georgian Bay, and at the convention of District No. 6 at Galt. (A report of the District No. 1 convention at Brockville will be featured in the October issue of Hydro News. Some highlights of Dr. Hogg's address at this meeting, however, are presented on page three in this issue.)

Discuss Power Restrictions

The power conservation programme outlined by the speakers is now an accomplished fact. On September 12 H. J. Symington, Dominion Power Controller, publicly announced restrictive measures designed to curb the non-essential use of electric power in an effort to make more energy available for the rapidly mounting load demands of war industries.

At the outset for their addresses Dr. Hogg and Commissioner Smith presented a brief review of Hydro's position upon the outbreak of war, and pointed out that although the Commission entered the war with an active reserve of 280,000 horsepower and an additional 200,000 horsepower available by contract for future delivery, the acceleration of Ontario's war production effort gradually diminished all surplus supplies. Ever since the war began, the officials stated, the Commission had made strenuous efforts to provide new power sources, and despite a substantial increase in its power resources during the war years, the Commission found itself, by December of last year, with

no immediate reserves whatever. They illustrated the measures undertaken since 1939 to build up the power supply of the province and concluded that even though additional plants are now being built, it was imperative that power restrictions be introduced.

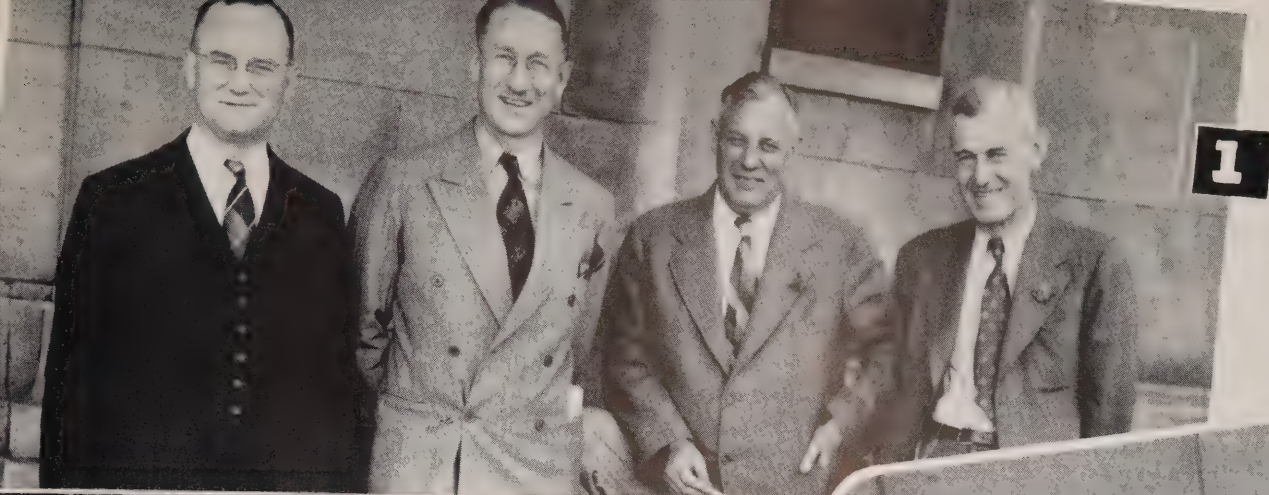
Commissioner Smith at the Georgian Bay Convention dealt with the Commission's wartime policy regarding rural primary line extensions, which he felt was being misinterpreted in some quarters because of the lack of all pertinent facts. He said that when the war broke out rural Ontario was considered the most widely electrified farming area in the world, and even though the necessary materials were becoming very difficult to obtain, the Commission pursued its normal rural expansion policy as long as possible. In October, 1941, the Dominion Power Controller informed the Commission that owing to an acute shortage of the materials required for these extensions, the construction of rural primary lines would have to be discontinued. The speakers asked for the support of the farming population and revealed the Commission's reluctance in having to adopt this measure.

Southern Ontario Operations

At another point Commissioner Smith stated that, in the opinion of the Commission's engineers, additional power could be generated on the Musquash river to the extent of about 7,000 horsepower and at Bala on the Muskoka river to about 5,000 horsepower. Mr. Smith added that the Commission is studying these matters in its plans for obtaining additional power.

Discussing a suggested three-system Southern Ontario interconnection, the speaker stated that the power supply problems, brought about in war time, had given the Commission an opportunity of observing the operation of its various systems, individually and collectively, under peak load conditions. "In Southern Ontario particularly," he said, "where the greatest volume of war production is concentrated, the mutual advantages of interconnection of the Niagara, Georgian Bay and Eastern Ontario Systems are becoming even more apparent. From an economic standpoint, such interconnection is highly advantageous. This move has the additional advantage of enabling the Commission to have optional clauses in agreements with the MacLaren-Quebec Power Company whereby we can take quantities of power at either 25 or 60 cycles. Such an arrangement supplements the interchange made possible

(Continued on page 10)



DISTRICT No 3 O.M.E.A. *Convention*

MANY old friends and business colleagues were brought together again at the District No. 3 O.M.E.A. convention at Port Arthur where a cameraman spotted a number of personalities who are well-known in Hydro circles. No. 1. Left to right, Dr. M. P. Bengier, chairman, Port Arthur Public Utilities Commission, and chairman of District No. 3, O.M.E.A.; L. G. Dandeno, superintendent of the Thunder Bay system; R. B. Chandler, manager, Port Arthur Public Utilities Commission; and T. C. James, municipal engineer, H.E.P.C. No. 2. Commissioner Allan Gray of the Port Arthur Public Utilities Commission; and Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C.; No. 3. R. T. Jeffery, chief municipal engineer, H.E.P.C.; and Judge J. McKay of Port Arthur. No. 4. Kenneth A. Christie, K.C., Toronto, president of the O.M.E.A.; and Mayor C. M. Ross of Fort William. No. 5. Mayor R. F. Dynes of Sioux Lookout and Lt.-Col. L. S. Dear, Port Arthur, Officer Commanding the 1st Reserve Battalion, Lake Superior Regiment.



HYDRO IS VITAL

(Continued from page 8)

by the Chats Falls frequency changer of 60,000 horsepower capacity and the Hanover frequency changer of 18,000 horsepower capacity, and, insofar as the three Southern Ontario systems are concerned, they are welded together with relation to the supply of base power."

Dr. Hogg told delegates at the Port Arthur gathering that a transmission line is to be built from Port Arthur to the vicinity of the Moose Lake power plant as an aid in the development and operation of the Steep Rock Iron Mines, some 115 miles west of Port Arthur. He stated that it has not yet been accurately determined how much power will be required for the final operation of the mine, but it is expected that about 6,000 horsepower will be required for preliminary operations and about 16,000 horsepower when the mine is established. As far as can be determined now, construction power can be supplied from the present capacity of the Thunder Bay System and when necessary a new 18,000 horsepower generator can be installed in the Alexander Falls plant when Ogoki water is available in the Nipigon river.

Recalls "Happy Associations"

The Chairman presented a broad, detailed picture of the Commission's accomplishments and future plans. He traced the history and growth of the Thunder Bay System, which he described as "one of the brighter spots of the whole Hydro organization", and made references to the Ogoki river diversion project.

At the outset of his address, Dr. Hogg recalled his many happy associations with that district. "It is almost thirty years since I placed the original survey party for the power development at Dog Lake on the Kaministiquia river", he said. "It is about twenty-five years since I organized the Nipigon river survey; and I travelled the district pretty thoroughly while I was in charge of the design and construction of the Cameron Falls Development, and later the Virgin Falls Dam and the Alexander plant. Time has not dimmed the pleasant memories that I have of my early work at the Head of the Lakes and, if I may say so, the friendly spirit which you extended to me in days gone by has been accentuated with passing years."

Discussing the dramatic transition which had taken place in world conditions since he had last addressed a District No. 3 convention in October, 1938, the Chairman said that Hydro was not caught unprepared for war but was caught unprepared for the fall of France and for the Nazi domination of Europe and the domination of the Far East by Japan. "As a result of large areas of the world passing into the enemies' hands this continent was called upon to reorganize and rebuild its existing industrial organization to supply the United Nations with large quantities of armaments and war materials to replace those being produced in enemy-occupied and bombed-out war districts."

In reviewing the present power shortage situation, Dr. Hogg declared: "In spite of our foresight in planning to meet anticipated loads, the demand has overtaken the supply and during the coming Winter we shall be faced with a power shortage in Southern Ontario which, as far as we can see now, will amount to 250,000 horsepower. To meet



**"NO, GIBBS.... I'M SURE
THE GOVERNMENT DOESN'T MEAN WE SHOULD
CONSERVE ELECTRICITY TO QUITE THAT EXTENT!"**

Hydro Must Not Fail

this shortage it is imperative that some restrictive measures be put into effect whereby certain non-essential uses of electricity will be curtailed to ensure that essential war industries will not suffer through lack of power supply.

"Hydro, as you will appreciate, holds the key to Ontario's war effort, for it is vital that there shall be no failure in the supply of power to munition plants, ship-building yards, tank and gun factories, military training camps, flying schools, and scores of other activities which are engaged night and day in essential war work."

Turning his attention to the Thunder Bay System, Dr. Hogg complimented the delegates on their administration of Hydro affairs in the district at the Head of the Lakes, declaring that the low rates prevailing there were the envy of many.

"As we look back over the past three decades since the City of Port Arthur first became a Hydro partner, we see a continuous growth. You have had, so to speak, your ups and downs, but when you examine the records and note that Port Arthur has had ten reductions in rates and the Head of the Lakes now has rates which are quoted as exceptional throughout the world, you have a system of which you may well be proud."

Pays Tribute to Thunder Bay

Dr. Hogg reported that construction of the Ogoki river diversion project is proceeding satisfactorily and in all likelihood, from a construction standpoint, Ogoki water should be flowing in the Nipigon river by this time next year.

In conclusion he assured the delegates that the steady progress of the Thunder Bay System has amply justified the faith the Commission had placed in the future of the district.

(Continued on page 19)

DISTRICT NO 27 O.M.E.A. Convention



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A LAKE passenger boat was the venue of District No. 2 O.M.E.A. Convention, the delegates setting out from Port McNicoll aboard the C.P.R. steamship Assiniboia. Before their departure, a cameraman was in action on the quay and the results are portrayed on this page. No. 1. Left to right, Commissioner William V. Brown, Meaford Public Utilities Commission; Commissioner J. F. Marcus, Kincardine Public Utilities Commission; Alfred Menary, secretary-treasurer and superintendent, Grand Valley Hydro-Electric System; Herman S. N. Denef, secretary-treasurer and superintendent, Hanover Public Utilities Commission, and secretary, District No. 2 O.M.E.A.; C. J. Halliday, chairman, Chesley Public Utilities Commission; J. Robert Beaulieu, chairman, Penetanguishene Water & Light Commission. No. 2 Delegates form in line for boat tickets. No. 3. The convention rendezvous—the S.S. Assiniboia. No. 4. Boarding the boat. No. 5. Back row, left to right, W. R. Harmer, H.E.P.C.; Kenneth A. Christie, K.C., Toronto, president, O.M.E.A.; Commissioner J. Albert Smith, H.E.P.C.; A. C. Hardy, H.E.P.C.; R. T. Jeffery, chief municipal engineer, H.E.P.C.; Front row, left to right, George Austin, chairman, Dundas Public Utilities Commission, James A. Blay, H.E.P.C.; Mayor Clifford Speer, Hanover.

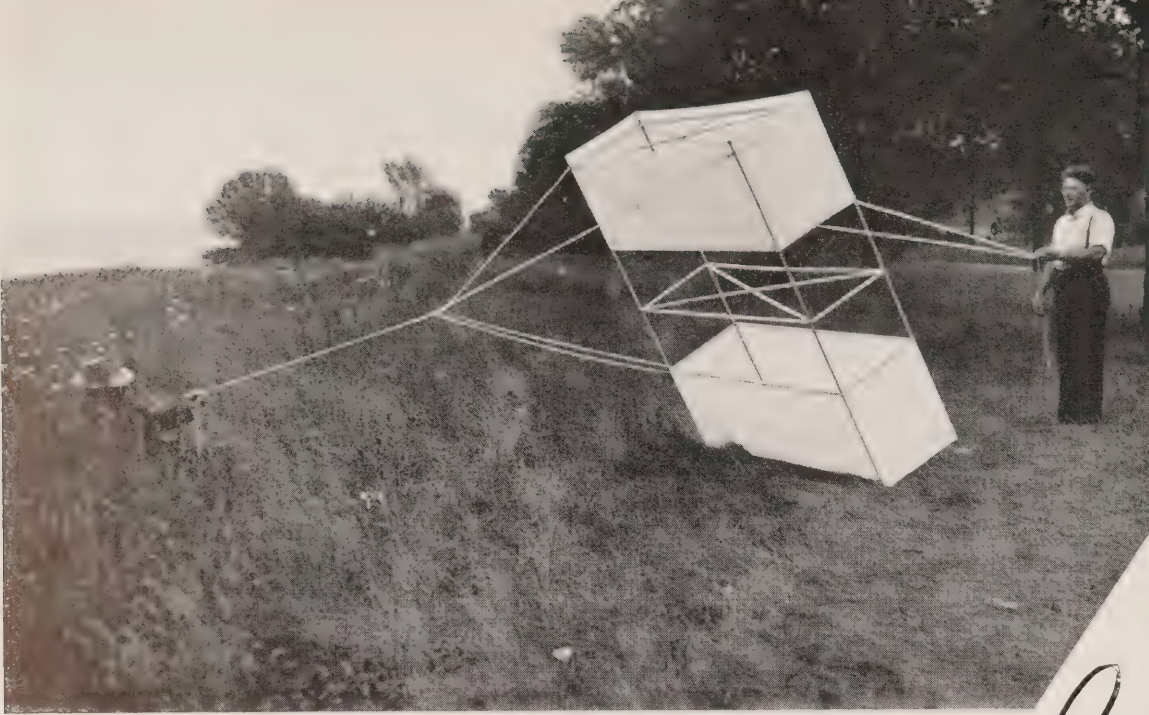
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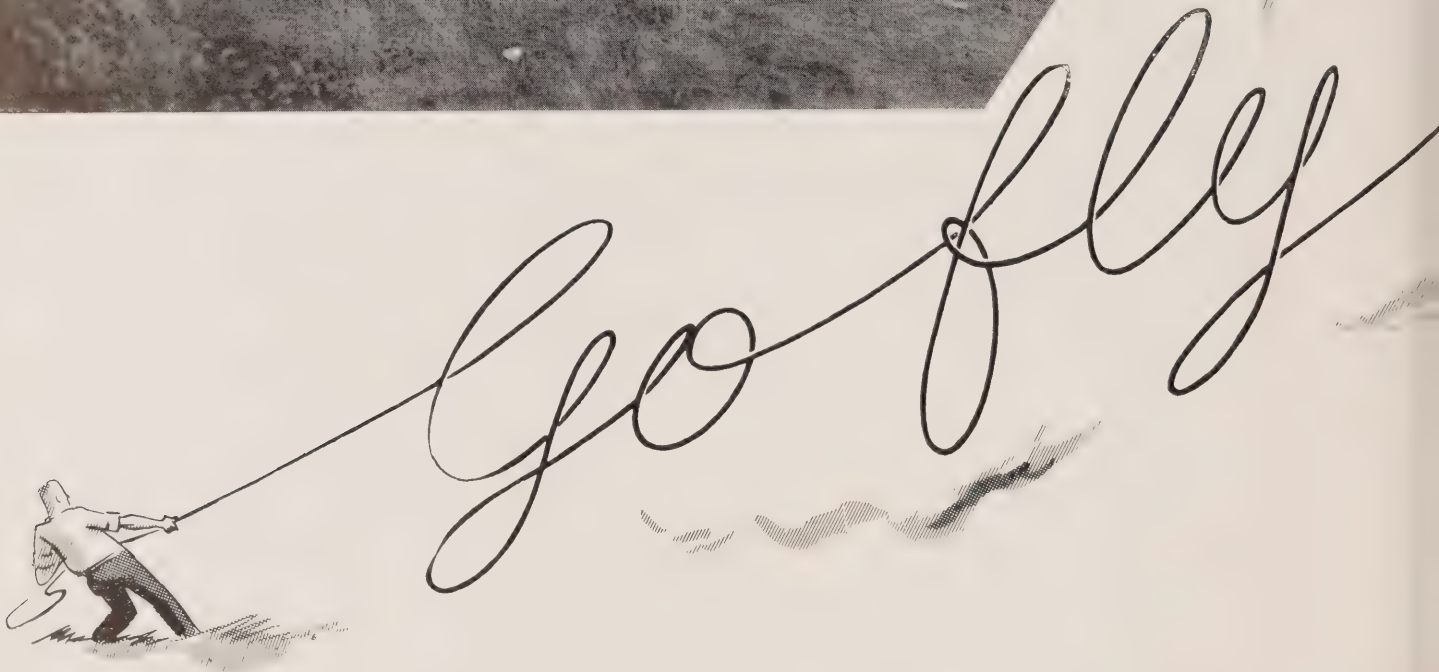
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This was the kite which was used to carry the first line—a fine piano wire—across the half-mile gap between the Canadian shore and the artificial island on the United States' side of the Niagara river.



IN unvarnished vernacular, the phrase "Go fly a kite" frequently implies sentiments not in keeping with literal interpretation. These four words, however, crystallized an idea which facilitated the erection of a steel cableway, spanning a half-mile gap on the Niagara river at the brink of the rapids leading to the great Falls where a submerged rock weir is now under construction.

Confronted with the problem of getting the first line across the river at this point, construction men on both the Canadian and United States sides of the International boundary gave much thought to the method which might be adopted. Direct crossing by a vessel was out of the question because of the swift current and the close proximity of the rapids. Towing a line across would have involved taking it nearly a mile upstream from the cableway tower on the American side and then bringing the end of the line down the Canadian shore and past numerous land

obstacles. There was also the possibility of the line being fouled by boulders in the river. Power lines and other obstacles precluded the possibility of using a plane, auto gyro or dirigible, while balloons were unobtainable. At the same time, the distance between the Canadian and United States cable towers was too great to come within range of a rocket gun.

Valuable Information Unfolded

To surmount the various difficulties the possibility of using a kite was suggested as the most simple and economical method of getting the first line across the gap. An investigation was immediately started and after a good deal of hunting much valuable information was unfolded on the history, eccentricities and functions of the kite. This research work revealed data on experiments which had been made with large kites and, from this knowledge, it appeared that the "Go fly a kite" idea might succeed.

The first job was the designing and building of a kite which would serve the purpose. And so, overnight, Hydro construction men at DeCew Falls Development became first-



class kite makers and produced a box-type, wind-power exhibit which would have brought joy to the heart of the most critical schoolboy enthusiast.

Measuring 7 feet 6 inches in height by 6 feet in width and 2 feet 6 inches in depth, it comprised a basswood frame and all the nainsook obtainable in St. Catharines for the

lifting surfaces. The controlling line was 1/32 inch piano wire—6,000 feet of it—while there were approximately 2,000 feet of trailing line terminating in a float and marked by coloured streamers.

As part of the cableway, two 155-foot steel towers had been erected—one on the Canadian bank between Chippawa and Niagara Falls, and the other on an artificial island built on the United States side of the International boundary half a mile away.

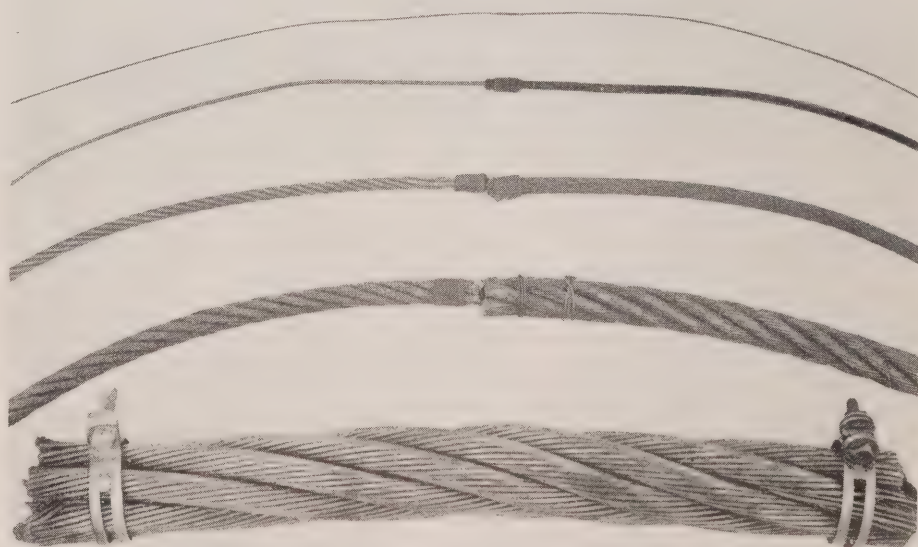
Waited for Favourable Wind

Everything was in readiness for the experiment. Then came several days of waiting for a favourable wind. When the day finally arrived, the men quickly took up their appointed positions. Because of the direction of the wind, the kite was sent aloft from a truck 2,000 feet downstream from the tower on the Canadian side.

Many pairs of eyes watched expectantly as it soared and swayed in the breeze, the fine wire, almost invisible

(Continued on page 21)

How the flying of the kite made it possible to build a cableway which is capable of carrying loads up to 20 tons, is shown right. The kite carried the fine piano wire (top left) across first. The piano wire in turn was used to bring a heavier line across, and so on until, finally, the 2½ inch steel cable (bottom) was hauled across the gap.

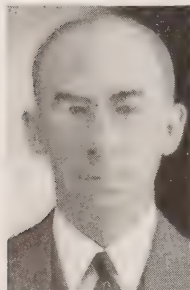


WARTIME REDUCTION IN STREET LIGHTING

Method of Effecting Saving Should Provide
For Best Possible Use of Available Power

By GEORGE G. COUSINS,
Supervising Lighting Engineer, H.E.P.C.

THE reduction of 20 per cent of the power used for street lighting as ordered by the Power Controller for the Dominion of Canada for designated areas requires a careful study of the street lighting systems of the municipalities affected by this order.



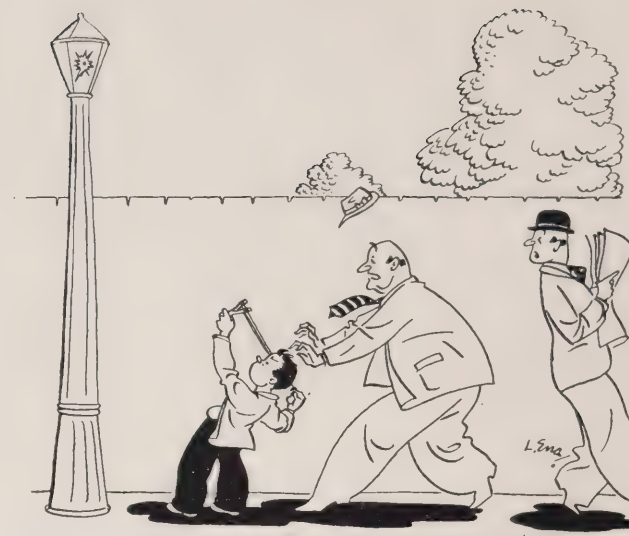
G. G. Cousins

At first, it would seem that the installation of lamps one size smaller than those ordinarily used would be the logical solution. However, it will be seen from the accompanying table that, generally, such an expedient would result in reductions of considerably more than 20 per cent. While this would save more power than is specified under the Dominion Power Controller's order, it is suggested that careful consideration be given to the method of effecting a saving, in order

that the remaining power may be used most effectively in the prevention of accidents, and as a deterrent to crime.

"Danger Spots" Require Lighting

The first step should be a study of the accident record of the municipality in order to learn if accidents are grouped around certain locations. If they are, these are the loca-



**"STOP, KELVIN, STOP! THAT
WON'T CONSERVE ELECTRICITY!"**

tions where the normal lighting should be maintained if at all possible. Where 500-watt or 300-watt lamps are spaced not over 150 feet or 100 feet respectively, a reduction of lamp size be made without much sacrifice in safety.

Saturday night shopping in the business streets of towns and small cities naturally involves much crossing of streets between blocks, and is known to be a prolific cause of accidents. Intersections where there is heavy traffic are danger spots which require lighting. Attention should be given also to lighting in the vicinity of fire stations, fire hydrants and curves in streets. Approaches to munitions plants of any kind should be given special attention as changes in shifts are accompanied by dense hurrying traffic, both pedestrian and automobile. Every war worker laid up by injury or removed by death is a serious loss to our war programme.

On the other hand, in a great many residential streets, the traffic, both motor driven and pedestrian, is relatively light, and the danger of accidents correspondingly lower. Furthermore, the illumination produced by diffusing glass units and radial-wave reflectors, midway between lamps, is so low that it is of very doubtful value as a preventative of accidents, and the elimination of alternative lamps in many of these streets may be less serious than reductions on more heavily travelled streets. However, in certain small municipalities the lighting on some residential streets is no more than enough to mark the general direction of the streets and it is very doubtful if the illumination produced by reduced lighting would be of any value to pedestrians. It was positively of no value to road traffic.

For streets that are lighted by lamps on both sides the cutting off of the light from one side would provide one normally lighted side for pedestrian traffic, but a staggered arrangement of alternative lights on both sides would be better for roadway traffic. The choice depends upon local traffic conditions.

(Continued on page 18)

Table of Lamp Wattages

Normal Lamp Size Multiple (Watts)	Next Size Smaller (Watts)	Per Cent Reduction in Watts
100	60	40
150	100	33
200	150	25
300	200	33
500	300	40
750	500	33
1000	750	25

6.6 Amp. Series:

Lum.	Watt	Lum.	Watt	
800	58	---	---	---
1000	69	800	58	16
1500	99	1000	69	30
2500	156	1500	99	37
4000	238	2500	156	35
6000	357	4000	238	33
10000	598	6000	357	40

20 Amp. Series:

Lum.	Watt	Lum.	Watt	
4000	239	---	---	---
6000	343	6000	343	39
10000	565	6000	343	39
15000	829	10000	565	32

1**2**

DISTRICT NO 6 O.M.E.A. Convention

3

HERE are some camera impressions of the District No. 6 O.M.E.A. convention at Galt.

No. 1. Delegates in attendance at the business session.

No. 2. A section of the head table at the banquet, showing from left to right, Kenneth A. Christie, K.C., president of the O.M.E.A.; Mayor W. S. McKay of Galt who welcomed the delegates to the city; Commissioner J. Albert Smith of the H.E.P.C.; Harvey O. Hawke of Galt who was re-elected president of District No. 6; and R. T. Jeffery, chief municipal engineer, H.E.P.C.

No. 3. Commissioner Mrs. A. M. Looby of the Dublin Hydro-Electric Commission and chairman William Henderson of the Waterloo Public Utilities Commission. Mrs. Looby received a special welcome as the first woman commissioner to attend a District No. 6 convention.

No. 4. Mayor R. G. Barton, chairman of the Palmerston Public Utilities Commission (left) was coming to the climax of a good story when the camera clicked. His listeners are Mayor J. H. Fawcett of Harriston (centre) and J. A. Mundy, chairman of the Harriston Hydro-Electric Commission.

No. 5. Four members of District No. 6 executive. From left to right, H. R. Hatcher, Galt, secretary; Frank May, St. Marys, vice-president; George Eifert, Tavistock, and F. E. Welker, St. Jacobs, directors.

4**5**



LIGHT CONDITIONING CAN CONSERVE POWER

LIGHT "Conditioning" is the term used by illumination engineers to define the art of using artificial light sources most effectively and efficiently. By "Light Conditioning" we can arrange lamps in such a way that the greatest number of people will be adequately served by a minimum number of lights and, therefore, without any needless waste of electricity.

As a public and patriotic service, Canadian General Electric engineers have made available the results of their studies on the subject of "Light Conditioning" which, in war time, can effect an important saving of power.

Conservation of electricity does not mean inadequate illumination. Good, restful light in the home is as necessary to the war production effort as good lighting in the factory, for the war worker can lose much valuable energy through carrying on his or her "relaxation" under inadequate lighting. The student, who faces a more condensed and exacting curriculum, requires good light more than ever if his or her eyes are to stand the extra strain placed upon them.

Good lighting, it is explained, can still be provided for the essential tasks which have to be done round the home, and it can be provided with the use of less electricity and without sacrificing any of the necessary foot-candles. Lamp stands, "Light Conditioning" authorities state, can be placed to serve two or more people where, previously, they may have served only one person. Coloured and decorative lights can be replaced by "light giving" types of lamp bulbs. At the same time, a considerable saving can be effected by switching off lights in hallways and rooms that are not in use.

A regular cleaning schedule is suggested for all lighting fixtures in the home. Such a schedule is designed to assure that the brilliance of lights will not be dimmed by dirty, grimy fixtures, lamp bulbs and bowls. Dirty and dusty lighting units, it is pointed out, can waste up to fifty per cent of the light from a lamp. Although dusting helps, only washing can restore lighting units to their original efficiency.

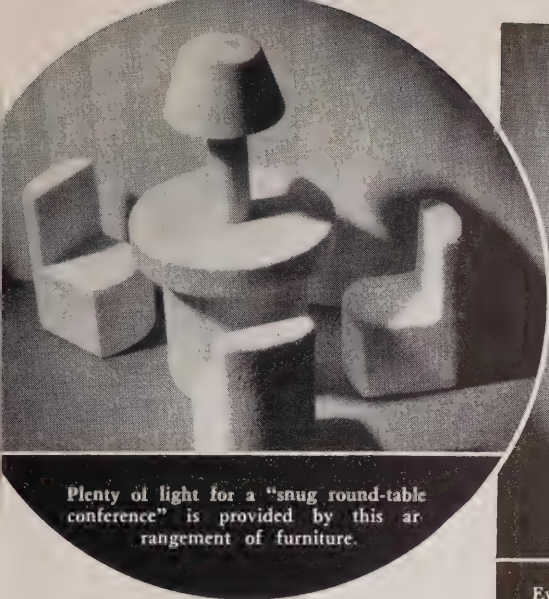
Elimination of all unessential lighting and the use of available power to assure adequate lighting in the home are two fundamental principles of "Light Conditioning", the practical application of which is graphically presented in the illustrations accompanying this article.

IT BEGINS AT HOME

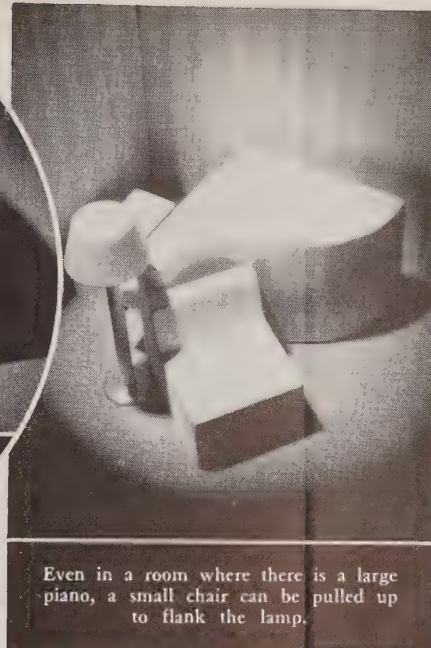
CONSERVATION, like charity, begins at home. Hydro employees, therefore, will realize the necessity of economizing in the use of electricity in both their offices and homes.

The seriousness of the power shortage facing the province this year has been emphasized by the Power Controller and the Commission, and all citizens have been asked to co-operate in saving power.

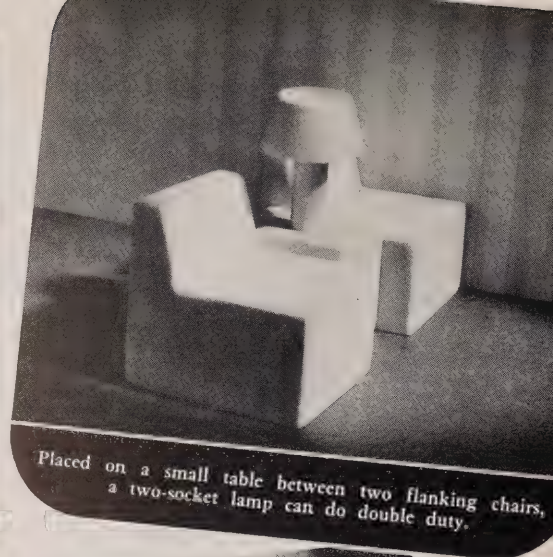
Hydro employees themselves will be expected to set an example in their communities by using electricity only when necessary and only for essential purposes.



Plenty of light for a "snug round-table conference" is provided by this arrangement of furniture.



Even in a room where there is a large piano, a small chair can be pulled up to flank the lamp.



Placed on a small table between two flanking chairs, a two-socket lamp can do double duty.

How Domestic Consumers Can Save Electricity

Conscientious Adoption of These Simple Suggestions Will Aid Canada's War Effort

HYDRO lighting engineers have outlined many simple ways in which the half million domestic consumers in the power shortage areas of Ontario can save electricity which is a vital driving force back of the war production programme.

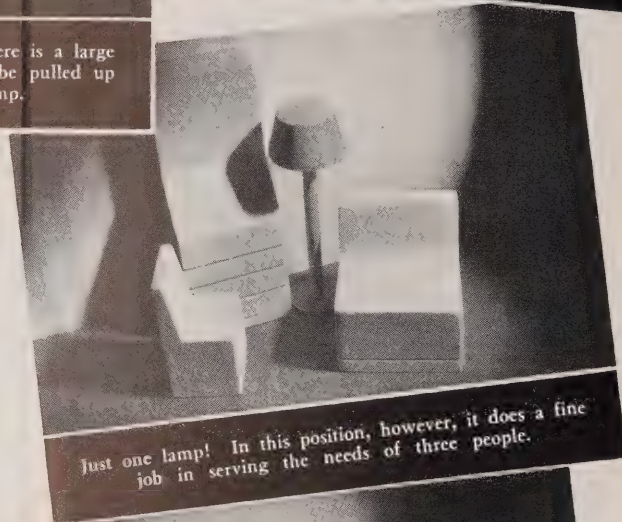
These suggestions, if followed conscientiously by all these consumers, will effect a considerable saving of power with the minimum of inconvenience to the consumers themselves.

Briefly, the suggestions are as follows:

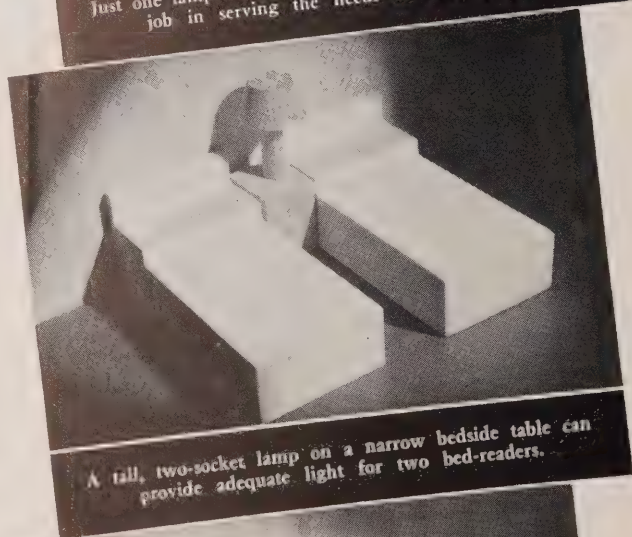
Home Lighting

1. Use only sufficient lamps to provide eye-saving light.
2. Use one light or lamp in the living-room, rather than three or four, and place so that the family may gather around the one light.
3. Have the light source as near as possible to work, but avoid glare in the eyes.
4. Keep lamp shades and fixtures clean; dusty fixtures absorb as much as one-quarter of the light; light-colored walls and ceilings reflect light into the room and absorb less than dark walls.
5. Eliminate colored bulbs; they absorb approximately one-third of the light; replace dark shade linings with white, or light colored lining, to reflect more light.
6. Keep lights off in empty rooms and halls.
7. Do not leave lights in garage burning longer than necessary.
8. Do not forget to turn off basement or attic lights.
9. Use porch or veranda lights only as needed; do not leave burning.
10. Watch lights in out-of-the-way places, such as fruit cellar, coal room, basement lavatory, attic rooms, closets, etc.

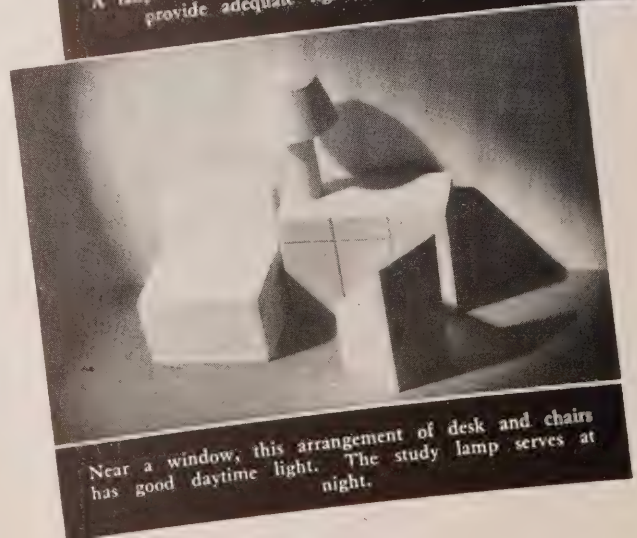
(Continued on page 20)



Just one lamp! In this position, however, it does a fine job in serving the needs of three people.

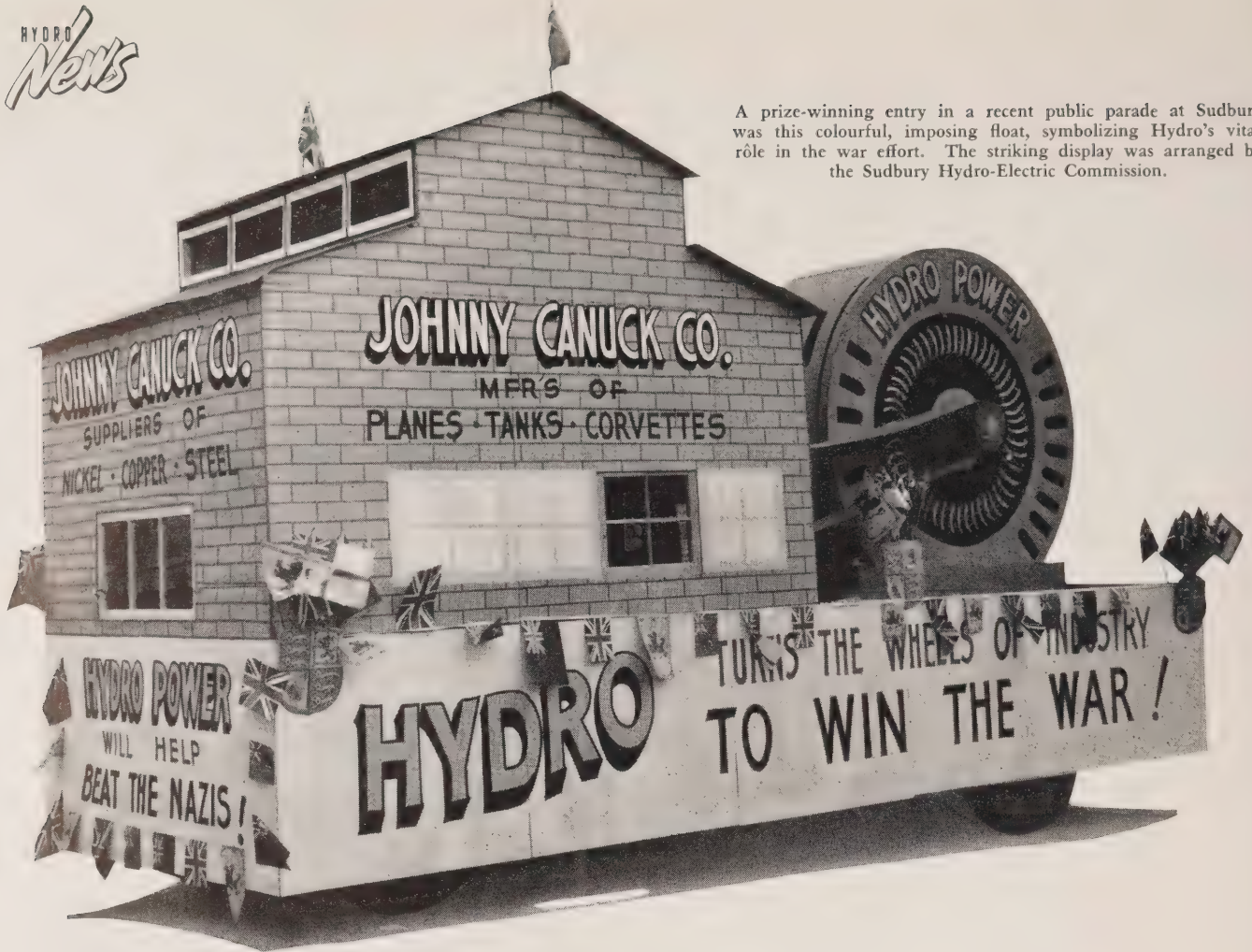


A tall, two-socket lamp on a narrow bedside table can provide adequate light for two bed-readers.



Near a window, this arrangement of desk and chairs has good daytime light. The study lamp serves at night.

A prize-winning entry in a recent public parade at Sudbury was this colourful, imposing float, symbolizing Hydro's vital rôle in the war effort. The striking display was arranged by the Sudbury Hydro-Electric Commission.



STREET LIGHTING

(Continued from page 14)

Prismatic refractors and modern light-directing units are designed with definite positions for the lamp filaments. When smaller lamps are used with such units the socket positions should be readjusted if the light-center lengths of the smaller lamps are different. If provision for this adjustment is available in radial-wave or diffusing units it would be well to make use of it.

In series systems the required reduction could be approximated by reducing 6.6 amp. circuits to 6.0 amps., and 20 amps. to 18.

The elimination of show window and sign lighting will bring about a dramatic transition in conditions in shopping districts. Therefore, business street lighting should not be reduced more than is necessary, in the interests of the safety of citizens, providing of course other street lighting can be cut to meet the new order. No general rule can be applied to all municipalities. Some business streets are normally lighted to intensities that will permit some reduction in view of the reduced motor traffic. In a number of towns dense diffusing glass may be removed where lamp sizes must be reduced. It is of the utmost importance to keep lamps and reflectors clean so that the available light may be used as efficiently as possible.

The reduction of street lighting is a serious matter in two respects: the conservation of power and the safety of

the people. Therefore, the simple reduction of all lighting on all streets may result in unnecessary hazards to human life, whereas a carefully planned scheme may result in the required reduction with less serious results.



Hydro power has been harnessed by Ontario's network of war industries to speed the output of fighting equipment twenty-four hours a day. The helmeted worker shown above is using electricity to weld the parts of an army vehicle.

Toronto Hydro Salvages Many Leaky Water Tanks

"**I**N the fall of 1941 when the tank shortage became acute, we looked into the possibilities of salvaging some of our leaky tanks and two methods were tried," says H. M. Guscott, chief repair supervisor, Toronto Hydro-Electric System.

"The first method was to send a man, equipped with the necessary tools, plugs and new wool, to a customer's home when a leak was reported and he dismantled the cover and plugged the tank with one of the various types of plugs that were available on the market.

"The second method was to have the leaking tank taken to our assembly room and stripped of its metal cover and rock wool. If the tank is found to have three or fewer holes, it is repaired by welding the holes. In order to make sure that the tanks repaired by welding are in good enough condition to be put back in service, we have found that it is necessary to use a booster pump to give us a water pressure up to 180 lbs. for testing purposes.

"The person doing the welding should burn back the metal around the holes until solid metal is encountered, or, in other words, until corroded portion is entirely burned away. The hole should then be filled by using the welding torch and welding rod. After this repair is made, it is necessary to apply hydro-static pressure of 180 lbs. to the tank, at the same time tapping it with a hammer. This is done to disclose any weaknesses or holes which are partially corroded in the body sheet or heads. Usually after this test it is necessary to make further repairs. After each repair, another hydro-static test is made.

"This method of repairing tanks by welding has been found to be much more satisfactory than sending men to the home of the consumer to plug his leaking tank.

"As our water heater assemblies bear serial numbers, we have found it advisable to incorporate in the serial number a symbol which will identify the units built up with welded tanks. We have found this marking a great help in making tabulations of the performances of welded tanks.

"The tanks which leak and have more than three holes when they come to our assembly room are not discarded immediately but are held with a view to going over them at a later date when more extensive repairs may be made."

HYDRO IS VITAL

(Continued from page 10)

"Your high degree of industrial prosperity has not come about by accident; it has been made possible only by the judicious development and use of your abundant natural resources to the greatest advantage. Hydro-electric power has been an outstanding factor in stimulating the growth of your community life at the Head of the Lakes, in tapping the riches of your great mining centres, and in bringing the conveniences of today to the population of this vast area.

"The war may be long or it may come to an end sooner than we expect. We cannot predict", declared Dr. Hogg, "therefore we must stand by ready to serve anywhere, at any time.

Club Sponsors Revue

"It brings patriotism down to brass tacks" is one description of the victory revue "Pull Together Canada", which is to be presented under the auspices of the Ontario Hydro-Electric Club at Eaton's Auditorium on October 1 and 2. Admission is free and by ticket only.

"Pull Together Canada" is something unique in the field of entertainment. In the first place it is a Canadian production. Canadians have written the songs and skits, have produced it, and take part in it. Its eleven different scenes deal with topics close to the hearts of all patriotic citizens. It is entertainment with a punch and aims to create that fighting spirit in every citizen that will enable them to face the demands of total war.



Here you see a farmer, stenographer, business man, housewife and worker, at the conclusion of the theme song of the revue, "You Can Fight for Canada", featured in "Pull Together Canada".

Herman S. N. Denef, energetic secretary-treasurer of the Georgian Bay Municipal Electric Association, was born in Bruce County, Brant Township, the son of Rev. Dr. and Mrs. E. N. Denef. Following his early education in a country school, he graduated from Hanover High School, and following a special course of study was, awarded a diploma in practical and theoretical electricity.



H. S. N. Denef

Mr. Denef served three years with an electrical contractor, and for a time was associated with the Canadian General Electric Company in Montreal. For the past 22 years he has been on the staff of the Hanover Public Utilities Commission. In 1925, he became superintendent and in 1928 was appointed secretary-treasurer as well. He has also served as secretary-treasurer of the Georgian Bay Municipal Electric Association since its inception ten years ago, and has been one of the leading figures in Hydro affairs in the Georgian Bay district.

CAN SAVE ELECTRICITY

(Continued from page 17)

Electric Range

1. When boiling water turn off element when kettle sings.
2. Do not heat more water than is necessary, and keep kettle free from lime.
3. Do not heat the water before it is needed.
4. When cooking use "High" heat for as little time as possible, then turn to "Low" thus using stored heat.
5. Use oven for cooking complete meals, rather than the cooking surface; only one element is required for the oven process while three or four elements are required when using the cooking surface.
6. Use stored oven heat for further cooking after the oven meal is completed.
7. If cooking surface is being used in preparing a meal, cook with double boilers, using each utensil, which will cut down the number of elements required.
8. Use the correct size of utensil on the proper size element.
9. Use flat-bottomed utensils with close-fitting covers.
10. When cooking vegetables, use a minimum amount of water.
11. Arrange meals to serve all food cooked at one time—this eliminates reheating.
12. If range is equipped with warming closet, turn off switch when heat is **not** needed.
13. Keep reflectors clean where used under electric elements.

Refrigerator

1. Open refrigerator door only when necessary, and close as quickly as possible.
2. Defrost refrigerator regularly—when $\frac{1}{4}$ -inch of frost has accumulated on the evaporator.
3. Operate refrigerator at temperature adequate for preservation of food; do not operate too cold.
4. If leaving home for two or three days, turn control on refrigerator to lowest operating point, but not necessarily to defrosting.
5. Locate refrigerator in order to obtain the best possible air circulation.
6. Do not place hot foods in refrigerator; wait until they are cool.
7. Do not load refrigerator with packages, bottles or cans that may be stored on pantry shelves.
8. Clean condenser regularly.

Water Heating

1. Use hot water sparingly.
2. When bathing, temper the water as it flows into tub.
3. Turn hot taps off after using.
4. Repair leaking hot water taps.
5. Do not wash hands, dishes, or clothes under hot running water.
6. Use minimum amount of hot water when washing dishes.

IT HAPPENED ONE NIGHT



At the close of a long busy day, recently, members of the Hydraulic department of the H.E.P.C. and their friends enjoyed a little relaxation at a corn roast. The above shot was recorded by William Harland.

Washing

1. Fill washing machine to water line only.
2. Keep lid on the tub when washing.
3. Use warm water for one rinse only when washing clothes.
4. Pre-soak badly soiled spots in clothes so as to reduce on washing time.
5. Use full-rated load of wash whenever possible. Do not overload.
6. Whenever possible, use the wringer at the same time that clothes are being washed in the tub. This saves time and electricity.
7. Do not leave washing machine operating for longer than necessary to wash clothes.

Radio

Turn the radio on only for programs desired; if not listening to the radio, turn it off.

Ironing

1. Press small, fine fabrics while electric iron is heating to the point required for regular ironing.
2. Do not allow iron to get excessively hot. This wastes badly-needed power. Turn iron off before ironing is completed, and use stored heat to press clothes that need only dampness removed.

Toaster

Operate electric toaster as toast is required; do not leave on when not toasting. Turn off at cord switch on toaster, or disconnect at wall plug.

Small Appliances

Use such electrical appliances as coffee-makers, sandwich toasters, waffle irons, fans, etc., only when needed. Turn off electricity as soon as their function has been completed.

Do not use portable electric air heaters or grates at any time.

GO FLY A KITE

(Continued from page 13)

from the ground, hanging in a deep curve with its lowest point only a matter of a few feet above the swift waters of the river.

Unexpected success was attained in the very first venture, the wire being carried from the shore across the gap without mishap. The water splashes from the tossing float and the coloured streamers enabled the waiting men on the island to follow the course of the fine wire and catch the kite which was guided behind the tower and hauled down.

Next followed a sequence of tedious operations. First the fine piano wire was used to pull over another wire of greater diameter. The latter, in turn, was spliced to a light cable one-eighth of an inch thick which was used to bring over a quarter-inch cable. Eventually, a strong steel cable, two and a half inches in diameter, was pulled across to form the 2,605-foot cableway which is now linked to the two steel towers. Each of these towers, it is pointed out, runs on two standard gauge tracks seventy-five feet apart, and the carriages are powered by electric motors.

Located on the Canadian side, the head tower along with its hoisting equipment weighs approximately 210 tons and, in addition, carries 250 tons of counterweight to balance the pull of the cables and their loads. The tail tower on the American side is the same size and weight, except for the hoist, and carries as much counterweight.

And so, the completion of this cableway was facilitated because Hydro construction men accepted the literal interpretation of "Go fly a kite."

The cableway between the towers is now constructed to provide the necessary transportation to permit the construction of the weir upon the bed of the river.

Rock Weir Submerged

The functions of the weir are manifold. It will restore to their former state the water levels lowered by the increased diversions permitted by International agreement. As a result of these larger diversions the Commission is able to generate an additional 135,000 horsepower in its plants, and the American plants are also able to generate a large amount of new wartime power. The weir will increase the level at the intake of the Queenston plant, augmenting the output of that plant further by approximately 15,000 horsepower. It will also effect a redistribution of the flow from side to side of the river, thus restoring the scenic beauty of the Falls.

By making the channel shallower than it is at present, the weir will cause the water level to rise upstream and redistribute the flow so that a greater quantity of water will pass down the river between the two ends of the weir and the Canadian and American shores. Preliminary construction operations indicate that, already, there has been an increase in levels.

Construction work commenced in April and, it is expected, that it will be substantially completed by the end of the present year. The first job undertaken was that of building a causeway in the river extending 2,200 feet upstream and the construction, at this point, (practically on the International boundary) of an artificial island where one of the towers of the cableway, which now spans the river, was erected, the other tower having been built on the Canadian shore. This cableway will remain in place for two or three years following completion of the weir for

FALL FLOWER SHOW



Illustrated here are five of the prize-winning entries in the Fall Flower Show conducted under the auspices of the Horticultural Section of the Ontario Hydro-Electric Club. J. F. MacLaren topped the list of prize winners with 13 "firsts" and 9 "seconds."

Others who received awards were: John Stark, 9 "firsts" and 4 "seconds;" H. R. Jeffrey, 4 "firsts" and 3 "seconds;" H. L. Wagner, 2 "firsts" and 2 "seconds;" George Argo, 1 "first" and 2 "seconds;" Miss Marjorie Petrie, 1 "first;" W. H. Carr, 1 "first;" D. H. Chambers, 1 "first;" H. H. Leeming, 2 "seconds;" Miss Ruth Biggar, 1 second;" and Miss Edith Thomas, 1 "second." The prize-winning entries illustrated above were shown by: (Upper left) Mr. MacLaren and Miss Petrie; (Right) Mr. Wagner; (Lower) Mr. Stark and Mr. MacLaren.

(Photos by Wm. Harland of the Commission Staff.)

Fire Prevention Week

The week of October 4 to 10 will be observed as Fire Prevention Week throughout Canada. The national importance of safeguarding life and property from loss by fire cannot be over-emphasized.

observation purposes, and in order that any necessary changes may be made. After the removal of the cableway towers, the causeway will be removed and the park lands, where the Canadian tower is located, restored to their original condition.

During the present construction operations, the cableway serves as a trackway to carry rock from the shore to points in the river where it is being deposited. The equipment is capable of carrying loads as great as 20 tons, but its normal working capacity is approximately 10 tons per load. Comparatively few men are required for the operation of the cableway itself, but a considerable staff is engaged in the preparation of the rock at the quarries and in transporting of that rock by trucks.

When completed, the weir will comprise a rock-fill on the bed of the river, approximately 2,000 feet in length, commencing at a point some 500 feet from the Canadian shore. The fill will have a top width of about 40 feet, and its height will range from 2 to possibly 10 feet, according to the depth of the river channel. The weir will consist of what is generally known as a rock-fill. This means that there will be no bonding material except as individual pieces of rock interlock with each other to form a stable structure. The pieces of rock deposited in the river range in weight up to 8 tons.

Primary Load Increases

A total primary load increase of 17.1 per cent for July, 1942, over the corresponding month last year is revealed in the monthly summary of loads.

This increase, based upon the maximum 20-minute peak horsepower load for the respective months, covers all four Hydro systems and the Northern Ontario Properties, and continues to reflect the mounting demands for power from essential war industries.

It is predicted that by the end of December of this year the primary demand in the Southern Ontario area, comprising the Niagara, Georgian Bay and Eastern Ontario systems, will be in the neighbourhood of 2,197,000 horsepower, an increase of some 250,000 to 275,000 horsepower over December, 1941. As the estimated capacity at that time will be 1,945,000 horsepower, a power shortage of approximately 250,000 horsepower is anticipated.

The July, 1941, total peak demand was 1,800,252 horsepower, as against 2,107,381 horsepower for July of this year. The Niagara system again headed the list with an increase of 295,979 horsepower or an advance of 23.4 per cent over July, 1941. Combined primary and secondary loads for all four systems and the Northern Ontario Properties totalled 2,166,523 horsepower, while the corresponding month last year showed a total of 2,012,277 horsepower.

PRIMARY AND SECONDARY LOADS

Niagara System	1,566,756	1,439,678	8.8
Eastern Ontario System	174,084	162,935	6.8
Georgian Bay System	53,282	49,897	6.8
Thunder Bay System	110,912	102,172	8.6
Northern Ontario Properties ..	261,489	257,595	1.5
Total	2,166,523	2,012,277	7.7

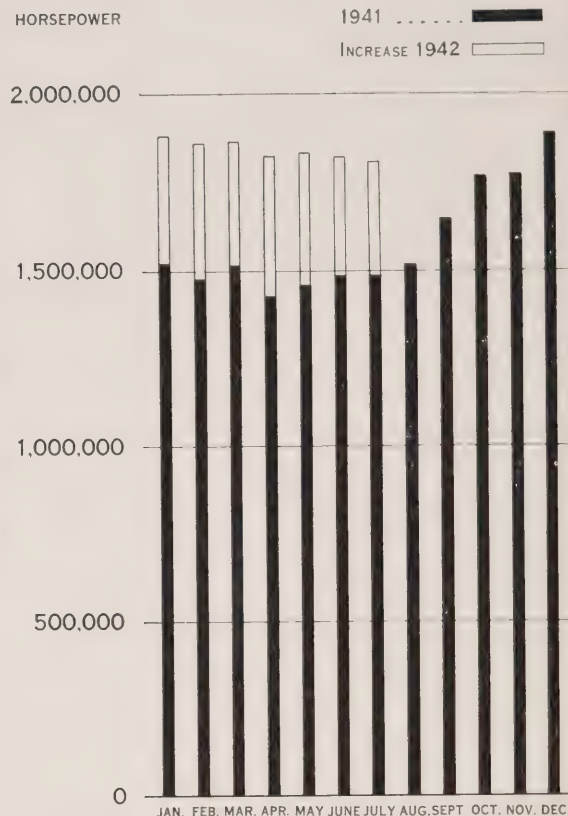
The charts in the next column show the primary load month by month for the combined Southern Ontario Systems and also for the combined Northern Ontario Properties and Thunder Bay System. The increase each month is indicated by the white blocks.



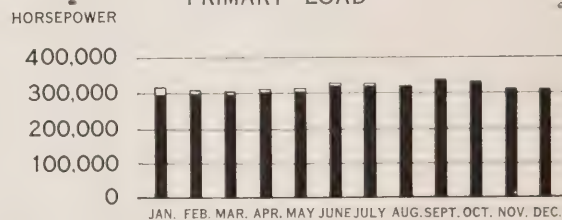
"The Alliston Public Utilities Commission wish to add their congratulations on your new magazine. We, each and all, look forward to the next issue. The illustrations and presentation of the story of the Ogoki and Long Lake diversions coupled with the DeCew Falls development make interesting and instructive reading for all employees as well as those interested in Hydro. There is so much of interest to each and every district, I am sure it will become a very popular and useful publication."—M. C. McLean, secretary-treasurer, Alliston Public Utilities Commission.

"May we offer our sincere congratulations on the new format of what was formerly 'The Bulletin.' We like the new title—'Hydro News' very much, indicating as it does that it concerns word of Hydro operations and other articles of keen interest. As a house organ I find it outstanding, and will look forward with pleasure to succeeding copies which I trust will come forward regularly."—S. S. Bain, district manager, The Solex Company, Limited, Toronto.

SOUTHERN ONTARIO SYSTEMS PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM PRIMARY LOAD



PRIMARY LOADS

Area served by	Maximum 20-Minute Peak H.P.		Per Cent Increase
	July 1942	July 1941	
Niagara System	1,560,992	1,265,013	+ 23.4
Georgian Bay System	53,282	49,897	+ 6.8
Eastern Ontario System	174,084	162,466	+ 7.2
Thunder Bay System	101,233	98,525	+ 2.7
Northern Ontario Properties	217,790	224,351	- 2.9
TOTAL	2,107,381	1,800,252	+ 17.1

MUNICIPAL LOADS, JULY, 1942

NIAGARA SYSTEM 25-Cycle			Popula- tion		Popula- tion			
	H.P.	Popula- tion		H.P.		H.P.	Popula- tion	
Acron -----	1,526	1,903	Erie Beach -----	31	21	Palmerston -----	604	1,400
Agincourt -----	233	P.V.	Essex -----	573	1,886	Paris -----	1,620	4,604
Ailsa Craig -----	130	487	Etobicoke Twp. -----	5,931	V.A.	Parkhill -----	201	1,029
Alvinston -----	95	649	Exeter -----	773	1,654	Petrolia -----	949	2,768
Amherstburg -----	857	2,704	Fergus -----	1,409	2,759	Plattsville -----	127	P.V.
Ancaster Twp. -----	374	V.A.	Fonthill -----	167	860	Point Edward -----	1,641	1,199
Arkona -----	53	403	Forest -----	534	1,562	Port Colborne -----	1,731	6,772
Aurora -----	1,305	2,821	Forest Hill -----	4,184	12,172	Port Credit -----	789	1,934
Aylmer -----	765	1,985	Galt -----	10,779	14,584	Port Dalhousie -----	1,136	1,599
Ayr -----	263	760	Georgetown -----	1,719	2,452	Port Dover -----	484	1,790
Baden -----	522	P.V.	Glencoe -----	191	763	Port Rowan -----	96	700
Beachville -----	664	P.V.	Goderich -----	1,593	4,674	Port Stanley -----	1,146	824
Beamsville -----	391	1,227	Granton -----	83	P.V.	Preston -----	3,918	6,337
Belle River -----	163	836	Grimsby -----	808	1,988	Princeton -----	130	P.V.
Blenheim -----	444	1,873	Guelph -----	10,236	22,500	Queenston -----	158	P.V.
Blyth -----	154	662	Hagersville -----	1,101	1,347	Richmond Hill -----	439	1,295
Bolton -----	217	629	Harriston -----	471	1,292	Ridgetown -----	498	1,986
Bothwell -----	117	683	Harrow -----	518	1,092	Riverside -----	970	5,235
Brampton -----	2,914	5,702	Hensall -----	199	686	Rockwood -----	124	P.V.
Brantford -----	19,631	30,947	Hespeler -----	2,773	2,938	Rodney -----	134	758
Brantford Twp. -----	1,000	V.A.	Highgate -----	72	322	St. Clair Beach -----	105	138
Bridgeport -----	169	P.V.	Humberstone -----	507	2,831	St. George -----	157	P.V.
Brigden -----	81	P.V.	Ingersoll -----	3,080	5,186	St. Jacobs -----	350	P.V.
Brussels -----	129	784	Jarvis -----	190	513	St. Marys -----	1,515	4,009
Burford -----	281	P.V.	Kingsville -----	503	2,453	St. Thomas -----	7,396	16,461
Burgessville -----	42	P.V.	Kitchener -----	23,856	33,281	Sarnia -----	9,249	17,979
Burlington -----	1,453	3,925	Lambeth -----	119	P.V.	Scarborough Twp. -----	4,187	V.A.
Burlington Beach -----	488	1,474	LaSalle -----	241	907	Seaforth -----	800	1,782
Caledonia -----	322	1,430	Leamington -----	1,430	6,048	Simcoe -----	2,290	6,340
Campbellville -----	35	P.V.	Listowel -----	1,447	2,984	Smithville -----	143	P.V.
Cayuga -----	118	700	London -----	34,774	75,176	Springfield -----	61	382
Chatham -----	6,014	17,148	London Twp. -----	356	V.A.	Stamford Twp. -----	2,464	8,275
Chippawa -----	311	1,223	Long Branch -----	1,141	4,258	Stoney Creek -----	205	933
Clifford -----	91	491	Lucan -----	203	643	Stouffville -----	328	1,198
Clinton -----	691	1,879	Lynden -----	115	P.V.	Stratford -----	7,738	17,163
Comber -----	142	P.V.	Markham -----	400	1,175	Strathroy -----	1,492	2,834
Cottam -----	66	P.V.	Merlin -----	78	P.V.	Streetsville -----	222	701
Courtright -----	42	355	Merritton -----	9,650	2,916	Sutton -----	409	949
Dashwood -----	93	P.V.	Milton -----	1,326	1,915	Swansea -----	2,458	6,606
Delaware -----	72	P.V.	Milverton -----	378	994	Tavistock -----	695	1,080
Delhi -----	368	2,430	Mimico -----	2,008	7,713	Tecumseh -----	393	2,331
Dorchester -----	94	P.V.	Mitchell -----	736	1,670	Thamesford -----	219	P.V.
Drayton -----	135	528	Moorefield -----	31	P.V.	Thamesville -----	175	816
Dresden -----	393	1,525	Mount Brydges -----	100	P.V.	Theford -----	99	598
Drumbo -----	123	P.V.	Newbury -----	23	288	Thorndale -----	92	P.V.
Dublin -----	37	P.V.	New Hamburg -----	674	1,441	Thorold -----	2,265	5,080
Dundas -----	2,782	5,001	Newmarket -----	1,775	3,800	Tilbury -----	1,274	1,923
Dunnville -----	1,179	3,916	New Toronto -----	10,640	7,514	Tillsonburg -----	1,248	4,602
Dutton -----	237	830	Niagara Falls -----	9,913	18,770	Toronto -----	299,766	648,098
East York Twp. -----	6,397	38,316	Niagara-on-the-Lake -----	1,031	1,764	Toronto Twp. -----	3,167	V.A.
Elmira -----	1,019	2,069	North York Twp. -----	7,169	V.A.	Wallaceburg -----	3,531	4,802
Elora -----	496	1,185	Norwich -----	432	1,301	Wardsville -----	30	221
Embro -----	138	420	Oil Springs -----	181	541	Waterdown -----	238	867
Erieau -----	168	281	Otierville -----	115	P.V.	Waterford -----	438	1,294

MUNICIPAL LOADS, JULY, 1942

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Waterloo	5,056	8,690	Mildmay	134	764	Kingston	12,190	26,741
Watford	365	1,023	Mount Forest	506	1,936	Lakefield	353	1,301
Welland	11,736	11,568	Neustadt	39	431	Lanark	76	686
Wellesley	144	P.V.	Orangeville	747	2,558	Lancaster	37	570
West Lorne	215	768	Owen Sound	4,943	13,599	Lindsay	3,747	7,241
Weston	4,347	5,784	Paisley	139	730	Madoc	193	1,130
Wheatley	166	761	Penetanguishene	1,012	4,177	Marmora	111	1,004
Windsor	44,981	103,571	Port Carling	269	520	Martintown	34	P.V.
Woodbridge	659	946	Port Elgin	666	1,415	Maxville	94	811
Woodstock	8,106	11,584	Port McNicoll	77	950	Millbrook	82	749
Wyoming	63	538	Port Perry	334	1,175	Morrisburg	286	1,484
York Twp.	15,139	77,175	Priceville	10	P.V.	Napanee	1,428	3,241
Zurich	139	P.V.	Ripley	112	420	Newcastle	209	701
25 and 66-2/3 Cycle								
Hamilton	142,513	163,768	Rosseau	49	305	Norwood	123	710
St. Catharines	26,665	32,559	Shelburne	242	1,053	Omeme	113	630
Trafalgar Twp.	504	V.A.	Southampton	692	1,467	Orono	80	P.V.
66-2/3 Cycle								
Bronte	100	P.V.	Stayner	314	1,106	Oshawa	14,709	25,035
Oakville	885	3,869	Sunderland	75	P.V.	Ottawa	30,777	150,277
GEORGIAN BAY SYSTEM								
60 Cycle								
Alliston	388	1,700	Tara	119	510	Perth	1,597	4,197
Arthur	129	1,089	Teeswater	130	873	Peterborough	11,766	24,400
Bala	294	355	Thornton	34	P.V.	Picton	1,147	3,400
Barrie	3,853	9,521	Tottenham	82	532	Port Hope	2,366	4,997
Beaverton	339	941	Uxbridge	373	1,480	Prescott	1,447	3,120
Beeton	129	617	Victoria Harbour	108	979	Richmond	70	428
Bradford	191	1,041	Walkerton	1,001	2,534	Russell	63	P.V.
Brechin	80	P.V.	Waubaushe	137	P.V.	Smiths Falls	2,673	7,741
Cannington	210	761	Warton	279	1,750	Stirling	292	947
Chatsworth	70	333	Windermere	72	117	Trenton	5,169	7,636
Chesley	639	1,812	Wingham	635	2,149	Tweed	243	1,181
Coldwater	113	545	Woodville	66	439	Warkworth	66	P.V.
Collingwood	2,690	5,636	EASTERN ONTARIO SYSTEM			Wellington	256	948
Cookstown	84	P.V.	60-Cycle			Westport	92	725
Creemore	141	661	Alexandria	195	1,976	Whitby	1,524	4,236
Dundalk	275	686	Apple Hill	54	P.V.	Williamsburg	95	P.V.
Durham	398	1,874	Arnprior	1,095	4,019	Winchester	357	1,017
Elmvale	152	P.V.	Athens	137	626	THUNDER BAY SYSTEM		
Elmwood	73	P.V.	Bath	51	325	60-Cycle		
Flesherton	44	452	Belleville	7,068	14,876	Fort William	12,969	30,317
Grand Valley	117	645	Bloomfield	134	636	Nipigon Twp.	168	V.A.
Gravenhurst	1,004	2,261	Bowmanville	2,521	3,850	Port Arthur	35,477	23,790
Hanover	1,441	3,190	Brighton	402	1,462	NORTH. ONTARIO PROPERTIES		
Holstein	11	P.V.	Brockville	4,815	10,463	Nipissing District		
Huntsville	1,152	2,943	Cardinal	376	1,602	60-Cycle		
Kincardine	847	2,483	Carleton Place	1,910	4,143	North Bay	4,196	16,013
Kirkfield	25	P.V.	Chesterville	269	1,094	Patricia District		
Lucknow	334	1,977	Cobden	78	643	60-Cycle		
Markdale	186	776	Cobourg	2,318	5,062	Sioux Lookout	297	1,967
Meaford	692	2,759	Colborne	192	960	Sudbury District		
Midland	3,949	6,627	Deseronto	205	1,002	60-Cycle		
			Finch	95	396	Capreol	224	1,660
			Frankford	163	1,095	Sudbury	8,273	32,731
			Hastings	93	823			
			Havelock	117	1,103			
			Iroquois	246	1,123			
			Kemptville	341	1,230			

A WORKMAN GOSSIPED



**DON'T
TALK
ABOUT
YOUR
WAR
JOB**



AN ENEMY AGENT ACTED

**OUR WAR PLANTS
NEED MORE POWER**

Save HYDRO

- Back of the guns and tanks . . . the men and machines . . . a mighty flow of Hydro power supplied from Hydro generating plants and transmission lines.
- Foot by foot, through weeks—months—years, under all conditions, over 7,000 miles of Hydro transmission lines and towers have been brought into being by your Hydro's army of surveyors—engineers—linemen. Ceaseless planning—working—building.
- Hydro lines carry over 2,000,000 horsepower, but more and more power is required by war industries. This demand must be met—it is the duty of all to conserve electricity for war production.
- The homemaker can save electricity in the kitchen and throughout the house; the office man, business man, shop-keeper—each can give more power to our war industries by saving some electricity every day. Do your part—start now to use Hydro sparingly.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

When shopping take your change in War Saving Stamps

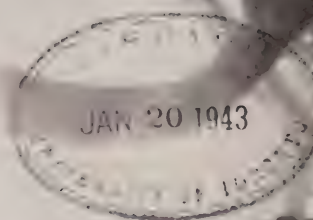
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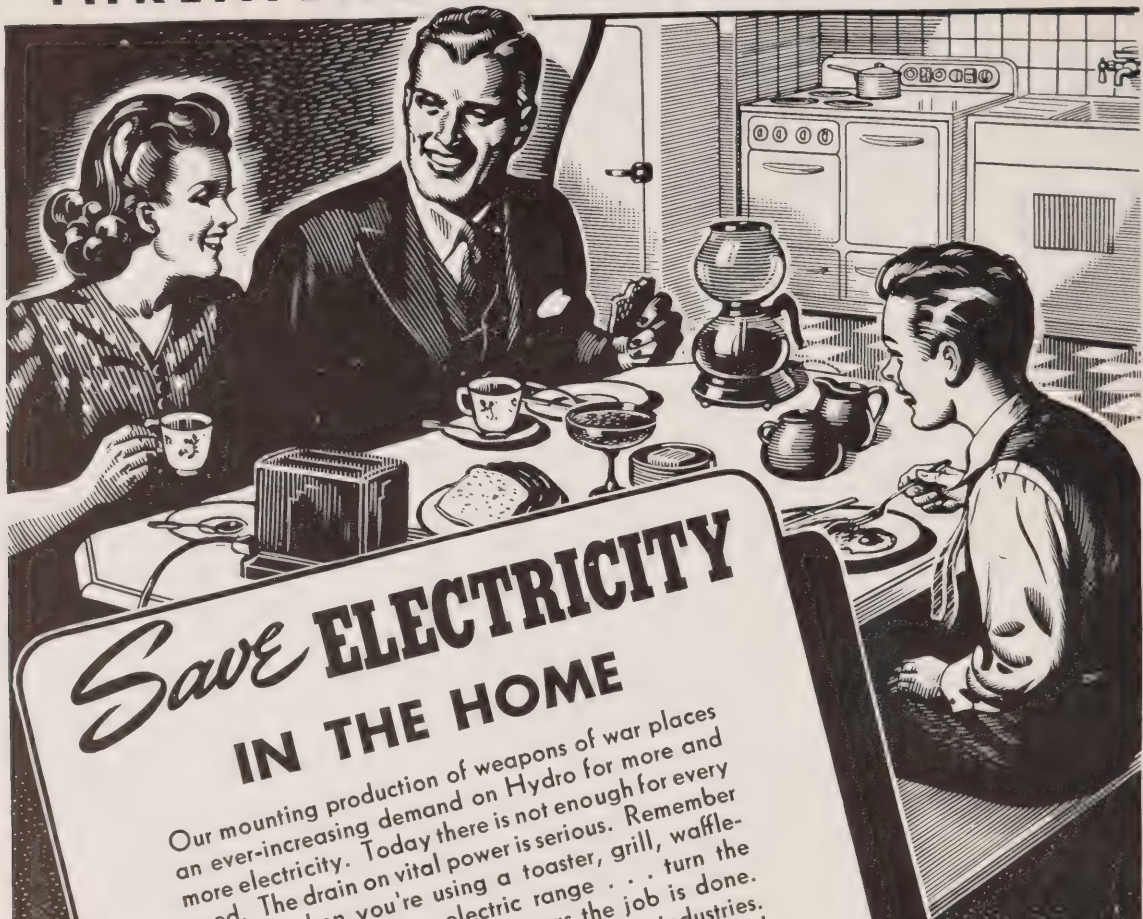
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STEEL FOR VICTORY

A *Critical* POWER SHORTAGE THREATENS OUR WAR EFFORT

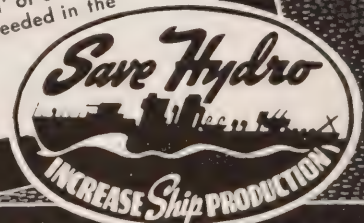


Save **ELECTRICITY** IN THE HOME

Our mounting production of weapons of war places an ever-increasing demand on Hydro for more and more electricity. Today there is not enough for every need. The drain on vital power is serious. Remember this . . . when you're using a toaster, grill, waffle-iron, coffee-maker or electric range . . . turn the switch 'OFF' promptly as soon as the job is done. Divert more and more power to our industries. Electricity is urgently needed to produce the vital weapons of war. **SAVE IT.**

HERE ARE SUGGESTIONS HOW YOU CAN DO YOUR PART

- Remember that stored heat in your electric range oven will continue the cooking process after power is turned 'OFF'. Plan to use this stored heat and save electricity.
- Turn 'ON' such appliances as coffee-makers, sandwich toasters, waffle-irons and grills only when you are ready to use them.
- Operate your toaster only as toast is required; do not leave 'ON' when not toasting.
- Save on lights, don't use two if one will do. Never leave lights 'ON' in empty rooms.
- Remember the turning 'ON' or leaving 'ON' of one unnecessary switch is a waste of power urgently needed in the present emergency.



INVEST IN VICTORY . . . SAVE ELECTRICITY
THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

Work, Save, Lend — Get Ready to Buy Victory Bonds

HYDRO News

formerly The BULLETIN

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The Front Cover



Processing of vital raw materials is making enormous wartime demands upon Hydro power. This fact is vividly portrayed in this month's arresting front cover illustration showing a giant electric furnace. Before the picture was taken by a Department of Public Information photographer, ten tons of scrap metal had been thrown into the yawning maws of this searing inferno. After three hours at 3,000 degrees Fahrenheit, the scrap was reduced to molten steel. This is the first step in the manufacture of heavy guns.

Volume 29

October 1942

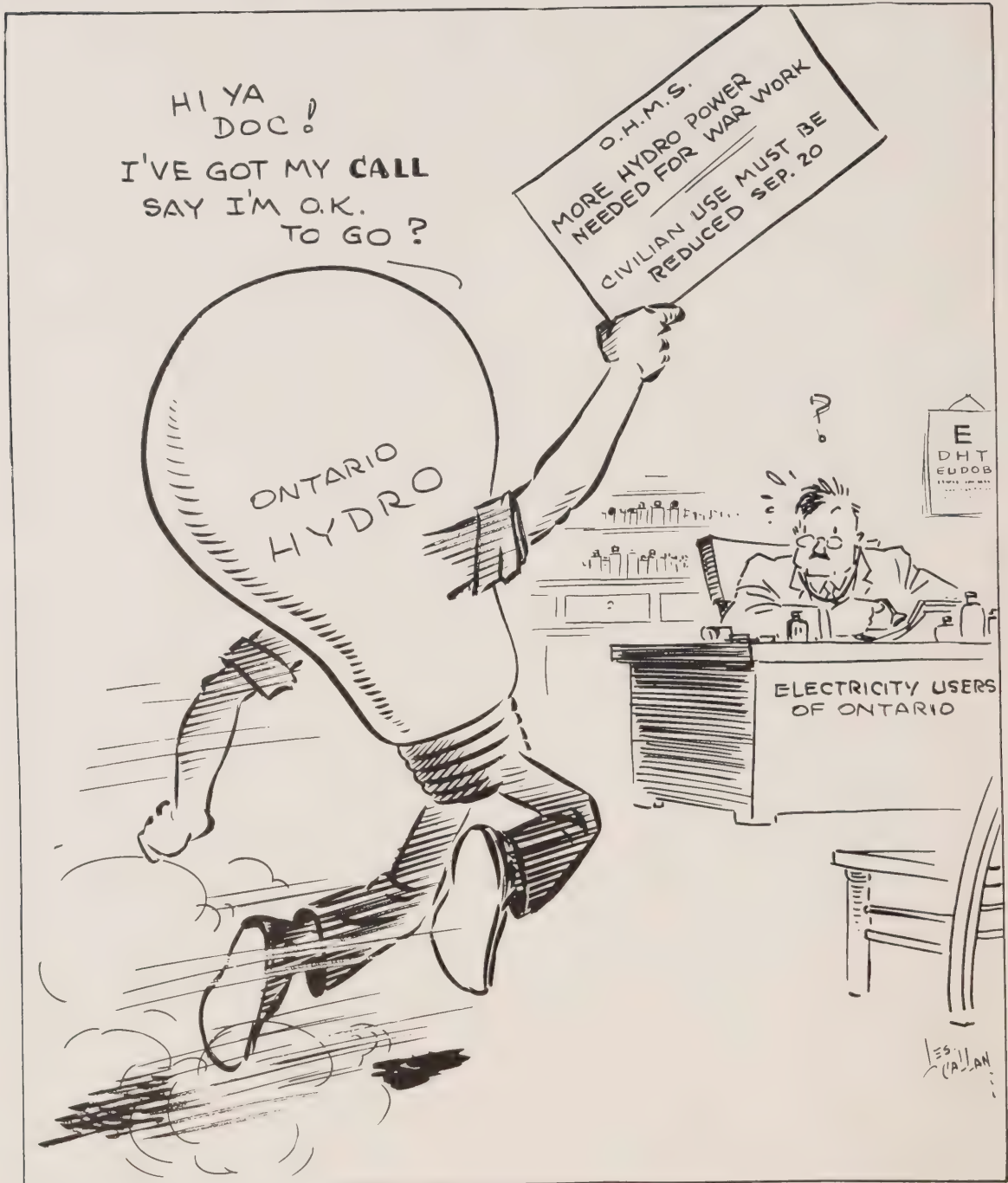
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NEEDED IN THE WAR JOB



(Reproduced through the courtesy of
The Toronto Star)

"How Much?" Not "How Little?"

TWENTY-FOUR hours a day and seven days a week, Hydro is doing one of the biggest and most vital jobs involved in Canada's war effort. That is why this winter's estimated shortage of 300,000 horsepower is serious, and demands a sustained, united and all-out effort on the part of municipalities and consumers alike to curtail the use of electricity for all non-essential purposes.

In the carefree days of peace, Hydro reached out across the Province to bring new comforts and conveniences to both city and farm dwellers. Today, its primary job is to provide the great driving force behind Ontario's ever-expanding network of war industries. Any slowing down or interruption of this essential national service means a slowing down or interruption in the production of ships, tanks, planes, guns and munitions. The tempo of mechanized warfare and the needs of this "significant period" are such that even a brief hold-up in any war industry on the home front may cost hundreds of lives on the battlefield.

Specified minimum restrictions set forth in the Dominion Power Controller's order should not be accepted as the maximum yardstick in effecting reductions. The same principle applies in the case of suggested voluntary curtailments. In other words, this conservation effort should reflect that spirit of ready and patriotic co-operation which will assure a maximum saving in every power shortage area—a saving which will be symbolic of our determination to back our fighting men to the limit. If municipalities and consumers tackle this wartime power shortage problem with patriotic zeal and in the spirit of "How much" and not "How little" can be saved, we shall not hear that bitter and tragic reproach "Too little and too late" from our fighting men who are depending upon us.

Onus on Utilities

UNDER Section 4 of the Dominion Power Controller's Order P.C. 5, attention is directed to the responsibility of electric supply authorities in enforcing the specified restrictions in the use of electricity. This section reads: "No supplier shall supply electricity for any purpose to any person who, to the knowledge of such supplier, uses electricity contrary to the provisions of this Order."

This clause, in other words, places on Hydro municipal electrical utilities the onus of seeing that the Order is observed by the consumers affected. Utilities and consumers alike are subject to penalties provided for violations of the Order. These penalties are commensurate with the seriousness of the offence. A serious violation, followed by a conviction, could mean a fine up to \$5,000 or five years imprisonment or both.

Such penalties are an essential component of all legislative orders or enactments. Without punitive provisions, a measure would lack the "teeth" which alone can back it with the necessary legal authority in case of violations. Hydro municipalities which recognize the seriousness of the present power shortage will be in hearty accord with any restrictive measures that will be effective in coping with this wartime emergency. Their diligence can be counted upon to implement fully the letter and spirit of the Dominion Power Controller's Order.

We Must Pay The Price

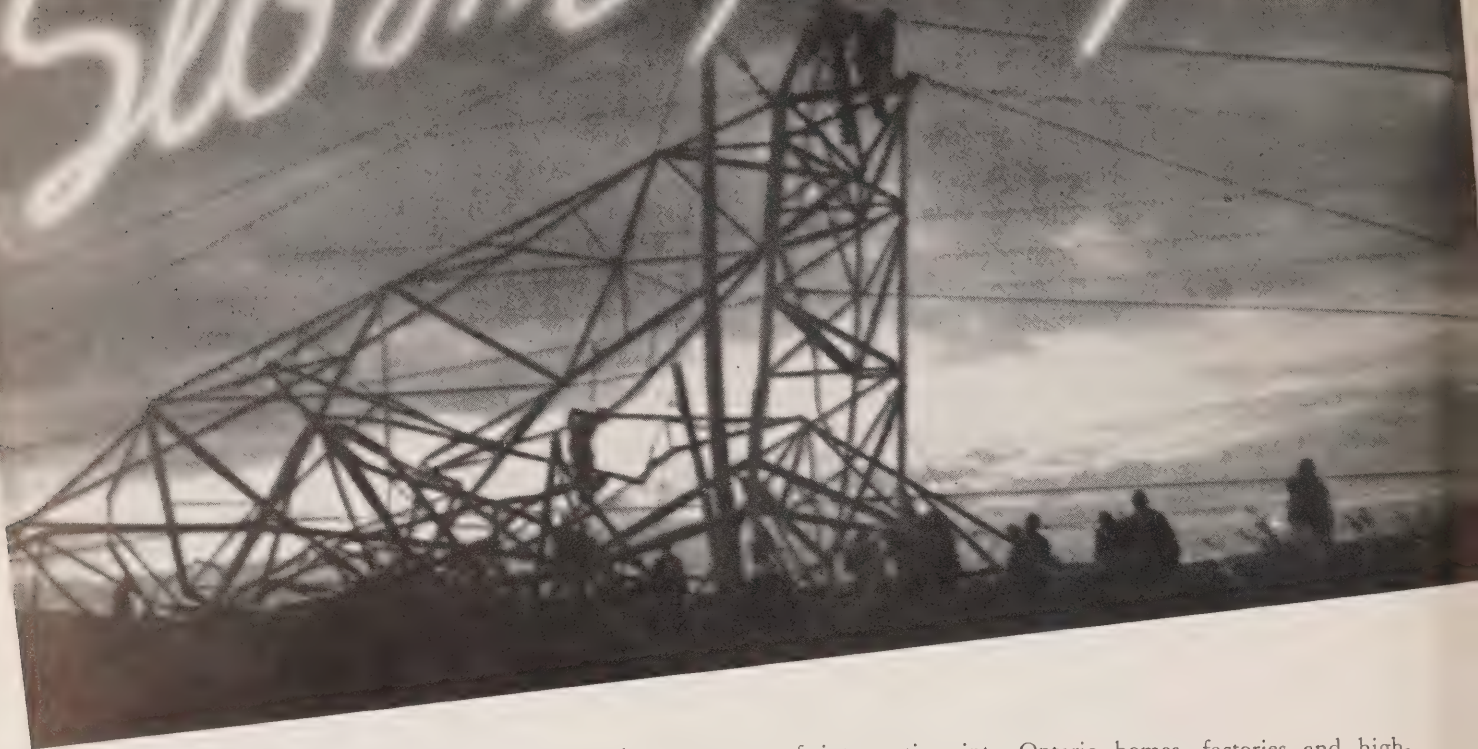
TO achieve complete victory is going to mean increasing self-denial and a realization that peacetime luxuries, comforts and services must be relegated to the background until after the war.

We must face facts. Our country, our institutions and our whole way of life are threatened. Failure to recognize the full implications of these dangers and that "it can happen here" will not only retard our whole war effort, but it can advance the aims of insidious enemy propaganda.

Rationing, priorities and high taxes have given everybody a nasty jolt. But what of it? We are all engaged in a "life and death" war and we must be prepared to pay the price of victory or lose everything we have—even our lives. We know that we have something better than our enemies to offer a war-torn world, but we must prove it by our deeds as well as our words. For that reason, every individual should be ready and willing to conscript every dollar he or she has and make it fight for Canada, freedom and decency.

Another opportunity to give tangible expression to our fighting spirit is presented through the medium of Canada's Third Victory Loan for \$750,000,000 which was launched on October 19. Over-subscription of this loan would constitute another smashing blow at the Axis.

Storm Troops



WHEN thunder crashes and cannonades across lowering skies and lightning rips through clouds with brilliant, rapier-like thrusts, the Hydro "Storm Troops" are on the march.

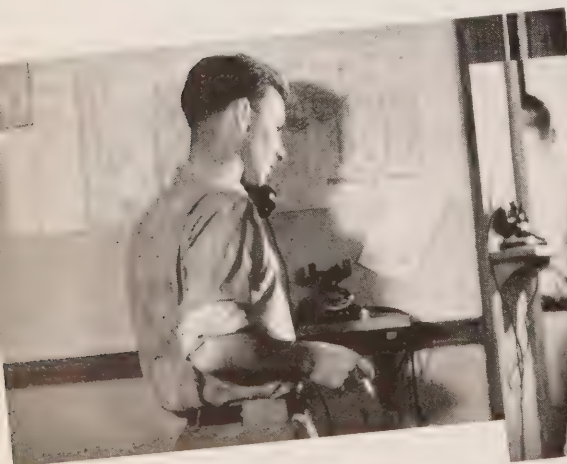
Through blinding, whirling snow, in the icy slash of sleet and against the unbridled fury of roaring gales, they carry on.

These "Storm Troops" are literally soldiers of the lines. They are the 300 rugged line repair experts who pit their skill and courage against the violence of the elements to restore service to damaged power lines.

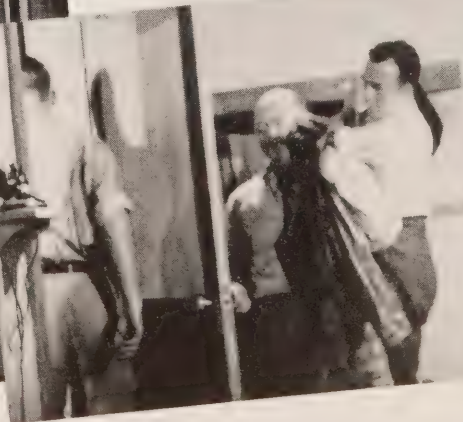
Year in and year out this hardened army of intrepid linemen runs great risks and courts danger on all sides so that electric power may be kept flowing with a minimum

of interruption into Ontario homes, factories and high-speed war production plants. When duty calls they set about their jobs with swiftness and efficiency, regardless of the time, the place or the extent of the damage to be repaired, racing to the point of trouble like grim, hard-hitting commandos on the attack.

The Hydro maintenance department has organized this outside repair staff so thoroughly that gangs of any size can be made available on very short notice for urgent repair jobs. These men play a silent but vital role in the public service. In the densely populated areas of Southern Ontario, where thousands of miles of throbbing power lines span cities, towns, farmland, rivers and open countryside on giant steel towers and sturdy wooden poles, large and small travelling gangs are stationed at convenient points,



The phone rings . . . Storm damage is reported and location given.



Hydro repair men quickly don their oilskins before facing the storm.



The "Storm Troops" pile into a waiting repair truck. They're off!



A wind of cyclonic proportions had sent the tower (left) crashing to the ground and a temporary pole had to be erected. Below—Hydro linemen on the job.



ready for emergency call. Patrol headquarters are located at key centres, usually at the high-tension station in the particular district.

Line maintenance and emergency repairs which may include replacing damaged conductors, insulators and broken poles, are handled by district patrolmen—generally two linemen to a district. Any extra help is supplied by “pick-up” labour. Patrolmen take care of repairs within a radius of up to 50 miles, while travelling gangs may be shifted anywhere in the Province to attend to a major breakdown or to facilitate rehabilitation operations.

In general these travelling gangs comprise 2 to 15 men each, equipped with a 3-ton F.W.D. truck with winch and derrick.

Rigid Rules Observed

Line interruptions are first evident in the control room of the high-tension station, where automatic circuit breaker openings occur. After a circuit breaker opening, the line is immediately tested. If the breaker stays in, the line is considered to be in a safe operating condition and a patrol is made at the first opportunity. If the line is in permanent trouble, the nearest superintendent or patrolman is notified and a patrol is started immediately. During severe weather, when it appears likely that the trouble may be of a serious nature, precautions are taken to have an adequate repair staff held in readiness to go out on the line, while arrangements are made to have materials and any additional help which might be needed available for speedy transfer to the job as required. The district field offices at strategic points and telephone communication over priv-

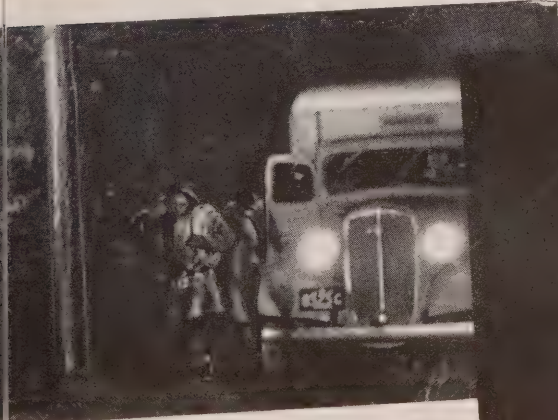
ate Hydro circuits provide a smooth working system of supervision and contact with working gangs.

Some of the more common types of breakdown result from poles broken by motor cars, insulators damaged by gunshot and minor lightning damage, while major trouble is usually the result of sleet, ice and wind storms, gales, destructive electrical storms and aeroplanes flying into power lines and tearing down conductors.

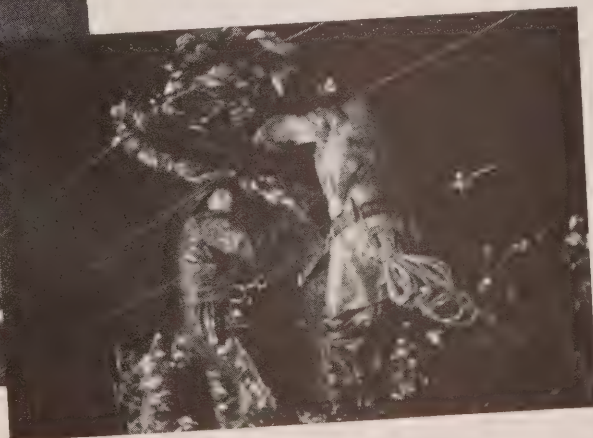
The men who form these repair brigades are highly trained, experienced linemen, specializing in all phases of line work. Their skill comes only after years of thorough “on the job” schooling. In most cases they begin as groundmen in line gangs on construction jobs, and then progress through various stages until qualified for climbing and working aloft. After meeting the rigorous demands necessary for first-class linemen and obtaining years of practice and knowledge indispensable to the “Storm Troops” they are absorbed in the organization of the maintenance department.

A rigid system of rules is observed in isolating and removing circuits which require servicing. These rules are based on experience and tested methods over a long period of years. Failure to adhere strictly to the code may result in a fatality, as the linemen frequently are called upon to work in proximity to “hot” lines. Each lineman is supplied with a safety

(Continued on page 20)



Arriving at the scene of the storm damage, they set to work.



Repairs are speedily effected and the flow of vital power is resumed.



Hydro Helps House Windsor War Workers

Compact and comfortable, these are a few of the Windsor wartime houses specially built to meet the needs of the large influx of workers to that city. They are located south of Tecumseh Road.



The street light in the foreground of this illustration (looking south on Aubin Street) is typical of the luminaires which are used in areas where the houses are being erected.



Forty-foot poles (such as the one shown here) are used jointly by Hydro and the Bell Telephone Company. This particular pole is located between Stanley Avenue and Labadie Road.

SINCE the outbreak of the war thousands of workers have been pouring into Windsor's thriving war industries from every part of Canada. They have come from far and near, singly and in groups, and many have brought their families with them hoping to settle in the western Ontario metropolis for the duration. As a natural result, the city's housing facilities have been overtaxed and the government has had to rush the construction of hundreds of additional homes to accommodate this ever increasing "boom town" population.

The critical housing shortage being experienced by Windsor is typical of the situation in many large industrial centres, and what is regarded as the most effective solution to the problem is being provided by Wartime Housing Limited, the government-sponsored construction agency. Already 1,800 new wartime homes have been authorized for Windsor in the eastern, western and southern sections of the city. Some 800 have already been completed and are being occupied in areas designated as Projects 1, 2, 3; another 500 are nearing completion in Project 4, and a start has been made on 500 in Project 5. In the meantime plans are going ahead for the establishment of further projects in the near future.

The prolific creation of such homes has thrown many new responsibilities on Hydro. Distribution facilities must be designed and pole lines erected to supply the electric light and conveniences essential to the comfort and health of these valuable war workers and their families. Wartime housing is an important phase of the war effort and Hydro service has had to be provided quickly.

According to W. A. Shaw, lighting and assistant engineer of the Hydro Division, Windsor Public Utilities Commission, most of these houses have been located in districts where there is no existing Hydro distribution. Consequently, much extra work has devolved upon the Hydro Division in surveying, planning layouts, procuring materials and equipment, and putting the lines in service. The load on the Windsor system has increased considerably, for both domestic and industrial services, and additional secondary pole lines are not sufficient. Primary feeders and new sub-station construction must also be undertaken.

In the first three projects, embracing 800 houses, three-wire service was supplied throughout, the majority of dwellings using electric stoves and water heaters. In the 1,000 houses covered by Projects 4 and 5, two-wire service only is provided, and as natural gas distribution facilities are not available, the occupants will have to revert to some of the earlier forms of cooking.

An interesting survey of one of the first blocks given service last year showed that the total of 32 wartime houses was using 27 electric ranges, 3 rangettes and 2 coal stoves. Each one of the 32 houses had installed a 3 k.w. metered electric water heater. The peak load figures for this block provide informative data for the distribution engineer in planning other areas. Since that time it has become necessary to greatly curtail the use of electricity in wartime houses by confining its use to lighting and small appliances.

Mr. Shaw states that the first 800 houses, constructed under the first three projects, are served by pole lines built in the alleys and used jointly by the Bell Telephone Company and the Hydro. Multiple street lighting is also supplied from the same pole line by the installation of one extra No. 4 wire. The average block is approximately 750 feet long. A modern pendant luminaire is installed on each street at each end of the block and at the middle of the block. The lights on both streets are connected by two overhead wires passing between the houses to the No. 4 secondary wire in the alley. The pendant luminaires with 200-watt lamps on double-bend brackets, are installed on 30-foot cedar poles at 21-foot mounting heights. All things considered, such a layout is very economical, as the one pole line supplies Hydro domestic service, Bell Telephone Company service, and street lighting to both sides of the same block.

The multiple street lighting is controlled by relays and a control wire, with the street lighting secondary tied into the distribution secondary wires. Jointly used poles are 35 feet high, with 40-foot transformer poles, as called for in the standard joint-use agreement with the Bell Telephone Company. Joint-use construction for this class of service is advantageous, because with the higher poles greater clearance is provided for the service wires to these one-storey houses.

The following list of materials, drawn up for two-wire service and street lighting for the 500 houses of Project 4, will give an idea of the extent of construction required:

- 32—30 foot poles for street lights
- 140—35 foot poles for distribution
- 18—40 foot poles for distribution
- 50—Head anchors complete with accessories
- 16—Transformers, 2300 volts to 230/115 volts of various capacities
- 2600—Lbs. No. 0 D.B.W.P. Wire
- 7300—Lbs. No. 2 D.B.W.P. Wire
- 3900—Lbs. No. 4 D.B.W.P. Wire
- 1000—Lbs. No. 6 D.B.W.P. Wire
- 7000—Lbs. No. 8 D.B.W.P. Wire
- 500—2 wire 115-volt meters
- 37—Pendant luminaires and brackets plus racks, insulators, crossarms and other miscellaneous pole line hardware.

The estimate for supplying two-wire service to 500 houses, with the cost of the meter and necessary street

A FINE PRESENTATION



Vivid impressions of the rousing patriotic revue, "Pull Together Canada," staged in the Eaton Auditorium, Toronto, on October 1 and 2, will be brought to mind by the above illustration depicting the air raid shelter scene.

Sponsored by the Ontario Hydro-Electric Club as a prelude to the launching of the 1943 War Services Fund appeal, this fine presentation conveyed a message which was stirring, realistic and timely.

G. A. Honsberger, president of the Club, estimates that approximately 2,400 members and their friends witnessed the two performances.

The members of the talented cast of "Pull Together Canada" are giving the revue throughout the country as a voluntary national service and without remuneration.

It is a fundamental principle of this group's *modus operandi* that the theme and spirit of the revue be accentuated rather than the identities and work of individuals. Nevertheless, one cannot altogether ignore the fine histrionic qualities which are revealed throughout the performance. Characters like Lil Wiggans, the Pearly King, the Mayor and others acquitted themselves with distinction.

The whole revue swung along with the sparkle and smoothness of a professional production. At the same time, it left the impression that each member of the cast was motivated by sincerity of purpose and an enthusiasm which they sought to convey to their audience.

"Pull Together Canada" graphically emphasizes the importance of a "Sound Home," "Team Work In Industry" and "A United Nation." The musical numbers, written and composed by the members of the cast, are rousing and "catchy".

All in all, it was the kind of revue which can go a long way in building sound national morale.

lighting included, is about \$53 per house. This amount covers only the construction of lines adjacent to wartime houses. When a proportion of the cost of new feeders and new substations is added, there is a considerable amount of new capital expenditure involved.

As time goes on, new demands are likely to be made on Hydro in various parts of the province to furnish vital service for far-reaching housing projects associated with the war effort. Work of this nature must be given priority.

Power Cut "Insignificant" To Other War Restrictions

But Conservation Vital, Declares Dr. Thomas H. Hogg At District No. 1 O.M.E.A. Convention—Sees Southern Ontario Systems "Inevitably Moving Towards Amalgamation"—Predicts Eventual Completion Of St. Lawrence Development

UPWARDS of three-quarters of a million horsepower will be produced by future power developments on the Ottawa and Madawaska rivers, while, eventually, the St. Lawrence is certain to supply vast quantities of power to the Niagara, Eastern Ontario and Georgian Bay systems which are "inevitably moving towards amalgamation."

These predictions were made by Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, when addressing the recent annual convention of District No. 1, O.M.E.A. at Brockville.

At the same time, Dr. Hogg told the delegates that rationing of electricity this winter would really be "insignificant" when compared to the rationing of other commodities. He directed attention to the shortage of rubber, steel, copper, aluminum and other materials. "And," he added, "your wives know all about the drastic reduction in the use of silk, coffee, sugar and tea."

The chairman asked the delegates to compare these "drastic reductions" with the comparatively small restrictions in the use of electricity. He warned the delegates, however, that constant voluntary conservation of power is imperative during the coming winter if the Commission were to meet its primary wartime obligations.

Prodigious Power Demands

As a background for his statements, the chairman first reviewed the power situation as it exists in Southern Ontario at the present time. He pointed out that although the Commission had entered the war with total reserves of 480,000 horsepower, and by next year will have increased its capacity by some 851,500 horsepower over the pre-war peak load of December, 1938, the prodigious demands for power from war industries have made imperative the introduction of restrictive measures on less essential electric services.

Declaring that the Commission had anticipated a shortage of power in Southern Ontario during the coming fall and winter months which, without restrictions being imposed, might range from 250,000 to 300,000 horsepower, Dr. Hogg stated that it had hoped to get along without interruption at least until the 20th of last month, the date on which the Dominion Power Controller's order was to

become effective. However, certain unforeseen increases in war loads, together with unfavorable weather and water conditions, made it necessary for the Commission to restrict certain of its large war load customers on two successive days earlier in September by cutting about 100,000 horsepower over a period of three hours. As interruptions of this nature constitute a definite hindrance to the war effort, the Commission prevailed upon all municipalities to co-operate by reducing their loads in every possible way, prior to the actual commencement date of the Dominion Power Controller's order.

Directing attention to the assets, operation, and problems of the Eastern Ontario system, Dr. Hogg stated, "During recent years a very lively interest has been in evidence in Eastern Ontario concerning Hydro affairs. You all know that I consider this interest natural and good. You know too that whenever your executive has come to the Commission for information you have been welcomed and given a frank answer. At various times we have discussed questions such as the value of the Madawaska power sites and the Barrett Chute plant in particular; the Chats Falls site and the question of whether it should have been reserved as a source of 60-cycle power for Eastern Ontario, and how it compares in value with the Madawaska river sites; Eastern Ontario's industrial development in relation to the power policy of the Commission; the proposed Ottawa river agreement with the Province of Quebec, allocating power sites on the Ottawa river in undivided units, with particular reference to the allocation of Carillon, *in toto*, to Quebec; and a number of allied questions."

Likely Power Sites

In general, Dr. Hogg said, Eastern Ontario had nothing about which to be apprehensive. They had a system well-suited to their requirements, and generating costs compared favorably with the Niagara and Georgian Bay systems.

The chairman also traced the history of industrial development in the eastern and western parts of the Province and its effect on electric power development.

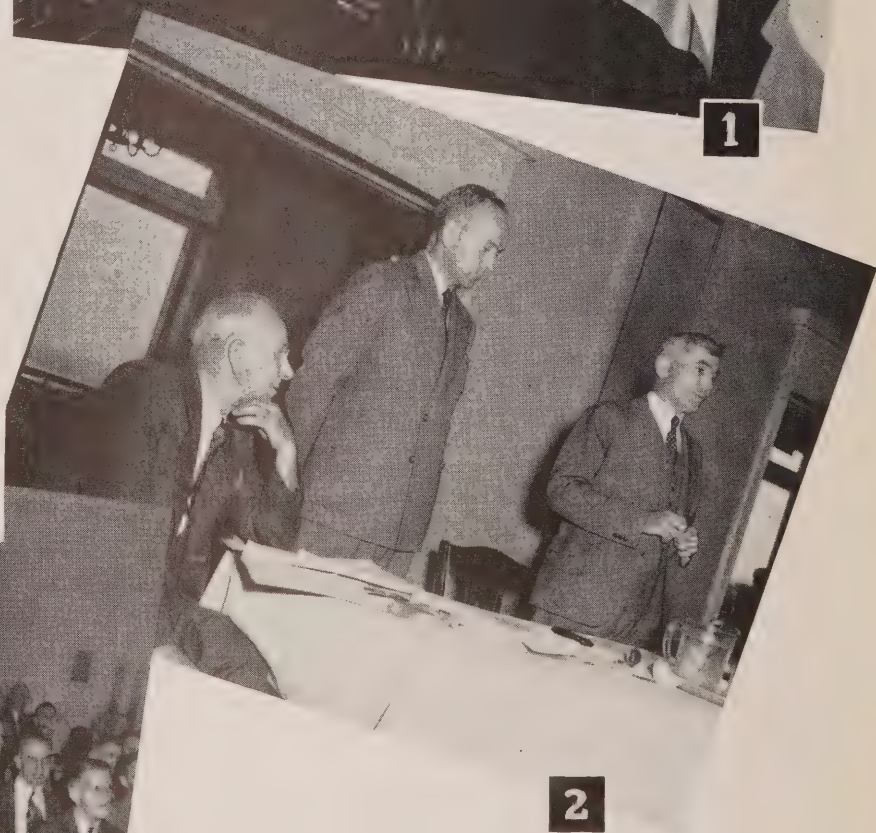
At another point, he stressed the fact that great caution had to be exercised in planning large power developments. "Large power developments," he said, "are very costly, and their cost has to be met whether or not there is any demand

(Continued on page 10)



DISTRICT No. 1 O.M.E.A. CONVENTION

EVENTUAL amalgamation of the Niagara, Eastern Ontario and Georgian Bay systems was predicted by Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., when addressing the delegates to District No. 1 O.M.E.A. convention at Brockville. Dr. Hogg's informative review of Hydro's wartime activities and problems was followed with keen interest by the representative gathering of delegates. Many of these delegates may "discover" themselves in either illustrations No. 1 or No. 3. No. 2 shows, from left to right, George Chase, Bowmanville, secretary of District No. 1; Ross Strike, Bowmanville, the president; and Dr. Thomas H. Hogg.



1

2

3

POWER CUT "INSIGNIFICANT"

(Continued from page 8)

for their output or any revenue therefrom. If they do not earn adequate revenue, bankruptcy may follow swiftly."

The chairman next presented a comprehensive comparison of likely power sites on both the Ottawa and Madawaska rivers. He pointed out certain factors which, he felt, enhanced the relative value of Barrett Chute and the Madawaska sites, collectively, and raised them above Chats Falls as a source of supply for Eastern Ontario. The Madawaska river, he stated, afforded an opportunity for developing in moderate blocks, up to 50,000 horsepower each, as the need arises, and in that way virtually eliminated the risk of the excessive financial burden involved in a development of a size that was out of proportion to the system's rate of growth. At the same time, Dr. Hogg stressed the value of the annual storage on the Madawaska which was wholly controlled by the Commission.

Amalgamation Advantages

Continuing, Dr. Hogg stated that because of the inter-provincial character of the Ottawa river, developments there had been rendered extremely difficult. However, negotiations for the allocation of sites to both provinces have now reached the penultimate stage. When the proposed agreement is signed, it will be for a term of 999 years. The main features of it are that Quebec will get Ontario's share of Carillon, Rocher Fendu and the lower half of Paquette, while Ontario will get Quebec's share of Portage du Fort (or Chenaux), the upper half of Paquette, Des Joachims, Cave, and Fournau. The sites allocated to Quebec in toto have in the aggregate a potential capacity of 422,000 horsepower, while those allocated to Ontario have a potential capacity of 428,000 horsepower.

The chairman dealt with the prospect of amalgamation of the three Southern Ontario systems (Eastern Ontario, Niagara and Georgian Bay) from the standpoint of both economics and engineering.

"The pooling of the generating costs for all of Southern Ontario has many attractive features," he said. "It affords important advantages that are derivable only in a limited measure by interconnection. It is consistent with the fundamental proposition that water powers belong to the Province and not to sections thereof. If the Southern Ontario systems were amalgamated, all municipalities would share alike the economic advantages of all water power already developed, irrespective of frequency, all additional power sites as they are developed irrespective of frequency, and the prospect of advantage from all potential undeveloped resources within economic range. The financial problem of interchange which now is troublesome out of all proportion to its importance would be greatly simplified," the chairman emphasized.

"The Chats Falls frequency changer set would become an item of Southern Ontario common cost. A tie-line between Eastern Ontario and Georgian Bay for interchange



"Say, aren't those rubber trees?"

direct at 60 cycles would be established and treated as a common cost to the advantage of all concerned, and many other useful measures could be undertaken with greater facility."

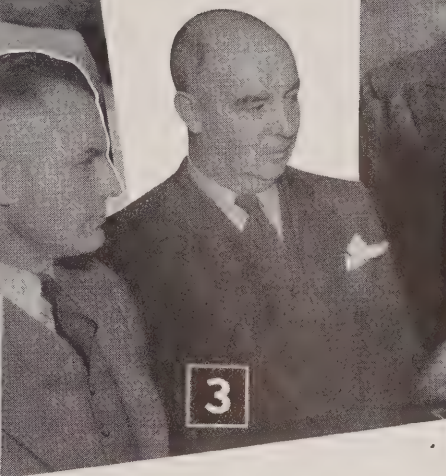
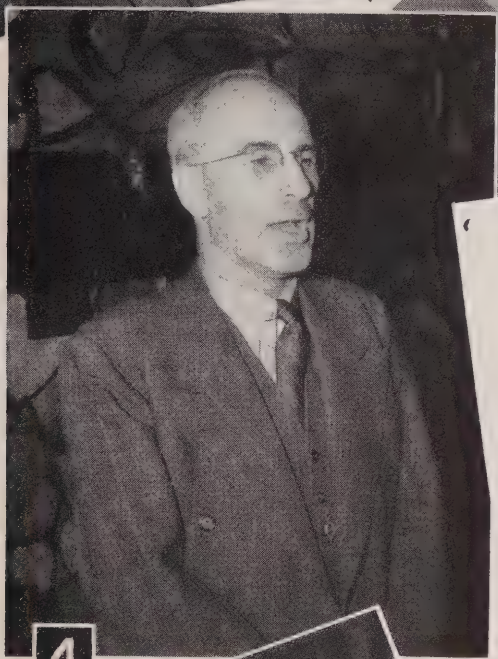
St. Lawrence Development

He then introduced the subject of the St. Lawrence river development, which he holds as a very likely move in the not too distant future.

"When the St. Lawrence river is developed (I use the word 'when' because, despite the checkered history of this project, its eventual development is certain and its development in the comparatively early future appears to me to be entirely probable)—so I say when the St. Lawrence is developed, it will undoubtedly be a Southern Ontario power source, supplying not only the Niagara system at 25 cycles but both the Georgian Bay and Eastern Ontario systems at 60 cycles. With that development there will arise further complex problems of common cost, which problems will have to be solved in a rather arbitrary manner unless their solution is rendered unnecessary by amalgamation.

"It appears to me that year by year, as the complexity of our interconnecting and interchange facilities increases," declared Dr. Hogg, "we are moving inevitably towards amalgamation. I regard eventual amalgamation in Southern Ontario as certain."

Victory Bonds Are Dollars In Action



DISTRICT No. 7 O.M.E.A. CONVENTION

COMMISSIONER J. ALBERT SMITH of the H.E.P.C., explained many of the wartime problems confronting Hydro when he addressed the recent District No. 7 O.M.E.A. convention at London. Recorded on this page are a few camera impressions of the occasion. No. 1: J. F. McMillan and John Doidge of London. No. 2: E. V. Buchanan, London, and Richard Thomson, Paris. The latter is one of the oldest members of the Association. No. 3: P. R. Locke, St. Thomas, and Bev Hay, vice-president, London, look at one of the Hydro conservation posters. Nos. 4 and 5: K. A. Christie, K.C., Toronto, president of the O.M.E.A., and Commissioner J. Albert Smith, H.E.P.C., respectively, addressing the convention. No. 6: This group comprises the president and three past presidents of the A.M.E.U. They are, from left to right: V. A. McKillop, president; E. V. Buchanan, J. W. Peart and R. S. Reynolds.





URGE LOCAL COMMISSIONS TO ACT AS POWER WARDENS

H.E.P.C. Launches Hard-Hitting Conservation Campaign To Meet Acute Power Shortage—Aids Prepared For Co-operative Action On Part Of Municipalities As Hydro Fights For Victory On Many War Production Fronts

By **JAMES A. BLAY**

SALES PROMOTION DEPARTMENT, H.E.P.C.

AS the full might of Canada's manpower and material resources are marshalled to keep pace with the vital demands of a total mechanized war, Ontario's vast electrically-powered network of industries is being geared to a still higher production tempo.



J. A. Blay

These demands have already over-taxed Hydro's Southern Ontario facilities to a point where a serious power shortage now exists. As a result, all-out conservation of electricity must be recognized as a weapon to hasten victory.

Scarcity of Equipment

At the beginning of the war Hydro engineers recognized that still more power would be quickly required.

In spite of the handicaps imposed by scarcity of equipment and shortage of labour greatly increased quantities of power were provided. Now, even with these important additional power developments, there is not enough. To help meet the shortage lights in streets, shops, show windows and signs are being strictly curtailed or turned out by order of the Dominion Power Controller.

Must Reduce Consumption

These restrictions, however, will only provide part of the savings necessary. Our war plants must have all the power they need. Every home should endeavour to reduce its consumption of electricity. We, in Ontario, because of the low cost, have come to regard electricity as a commonplace convenience. But, today we are at war, and our high electrical standard of living, along with other accepted benefits, must be temporarily adjusted in order that Can-

ada may play her full part in the common and united war effort.

It is easy to turn on a switch, and so easy to leave it on longer than necessary. Such oversights did not matter when there was plenty of Hydro available for every purpose. Today and every day, in every way possible, we must conserve all the Hydro we can for the thousands of war plants throughout Ontario.

As an example: for every domestic consumer to save 100 watts of electricity for 1 hour in every 24 may seem

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One-Minute Radio Spot

Here is a typical example of the one-minute radio "spots" which will be heard over Ontario broadcasting stations in the power shortage areas during this winter's conservation campaign:

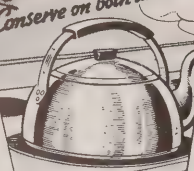
(Sound)—Bugler sounds "Fall In".

(Boy's Voice)—"Hello, everybody. I'm a 13-year-old boy. I've got three brothers and sisters. We are all soldiers and I'm captain because I'm the oldest. What do we do? Well, every one of us tries to save some electricity every day. All that we can save is needed by the places where they make guns and things for our soldiers. We watch the electric switches all over the house except in the kitchen. My mom is in charge there. She saves lots of Hydro. No light is ever left on in our house unless it is needed. If we can make one light do we never use two. My dad says there ought to be soldiers like us in every home and he is right because we save a lot of electricity, and Hydro power will help win the war. Thank you."

(Sound)—Bugler—"Dismissed".

HYDRO
News

**SAVE ELECTRICITY
CONSERVE APPLIANCES**
Conserve on both and Help win the War!



Metals

are desperately needed
for weapons of war!

● Night and day, from Ontario great war plants comes the call for steel—iron—copper—nickel. The essential metals that go into ships, guns, planes and tanks are the metals that make toasters, irons, ranges—kinds of electric appliances—use them carefully, war needs call for it.

Hundreds of Ontario's war plants require more and more power vital war production. Do your part meet the ever increasing demand use Hydro sparingly in lighting, cooking, when heating water, and when possible in your own home.

Every unit of electricity you use and every day you prolong the use of an electric appliance by extra care is definitely helpful to Canada's War Programme.

Save electricity. Take extra care of every electric appliance. That's a contribution that will help win the war—sooner.

Utility Name

**Save Hydro
IN YOUR HOME**

**Help win
the War!**



**You and your family
can do your part!**

● Night and day, Ontario's war plants call for more and more electricity. Every household is a guardian of Hydro and the electricity saved in the home means more power in the war.

Turn off lights when not needed. Use two lights instead of several. Turn off range oven when not needed. When switch off lights, every unit of electricity saved will help win the war.



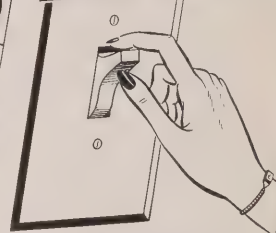
SAVE HYDRO
INCREASE
WAR
INDUSTRIES
PRODUCTION

Utility Name

**TURN OUT
LIGHTS
WHEN NOT REQUIRED**
**WAR
INDUSTRIES
NEED
POWER**



**Don't Waste
ELECTRICITY**



**WAR INDUSTRIES
NEED POWER**

**Save
ELECTRICITY**



INCREASE PLANE, TANK & GUN PRODUCTION

**WAR INDUSTRIES
NEED
POWER**

Co-operative action on the part of municipalities is recognized as vital to the success of the Commission's conservation campaign. To facilitate this action, many aids have been prepared for the use of municipalities in their own areas. Shown above are a few of these aids in the form of two local utility newspaper advertisements, a folder and reminder card. At the left is one of the Commission's conservation messages which will be featured on billboards.

Hydro DOES THE HOUSEWORK—WHILE YOU DO YOUR WAR WORK

But It Must Be

Conserved

For

War Industries

Turn off switches when Elements not needed.



Blotters carry an important conservation message.

URGE LOCAL COMMISSIONS TO ACT AS POWER WARDENS

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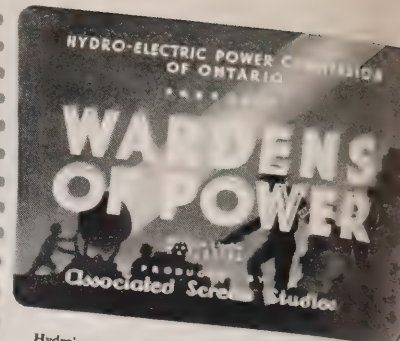
insignificant, but when that is multiplied by more than a half-million residential consumers in the power shortage area, the accumulated saving of electricity totals over 50,000 kilowatt-hours per day—sufficient to continuously operate, 24 hours a day, a 2,800 horsepower munitions plant.

There are a great many places in the home where electricity can be conserved with little, if any, inconvenience to the homemaker. Many suggestions were listed in the September issue of *Hydro News*. In order to familiarize consumers in a very general way with possible methods of conservation of Hydro, the Commission has prepared an educational programme which includes newspaper publicity, radio spot announcements over a chain of Ontario stations, and the scheduling of the Hydro technicoloured film "Keepers of the Light" for showing in a large number of theatres in the Province.

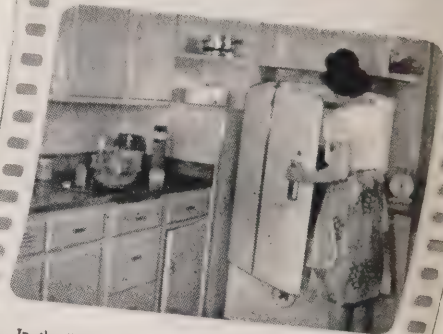
A more direct appeal to the consumer for the conservation of electricity can be made by the municipality, and in order to assist in this local effort there has also been prepared literature appealing to residential and other users to save electricity wherever and whenever possible. The material, some of which is illustrated on these pages, includes the following:

1. A new Hydro film on conservation entitled "Wardens of Power" has been produced, portraying methods whereby electricity may be saved in the home, office, hotels, etc. The film is in technicolour with sound, and is now available for showing to schools, church organizations, service clubs, women's groups and war organizations.
2. Local utility newspaper advertisements on Conservation in the Home.
3. A series of five window and office cards indicating methods whereby savings in electricity may be effected.
4. A folder for distribution to the consumers suggesting possible methods of conserving electricity in the home.
5. Conservation stickers that may be applied to lighting bills, correspondence paper, order forms, etc.
6. Cards gummed and perforated to be fastened on switch covers or cords, as a reminder to turn out lights when not needed.
7. Blotters for distribution to school children, stressing conservation of electricity.
8. A billboard poster has also been developed for showing in the municipalities.

There is every indication that the consumers will co-operate by conserving electricity to help meet the acute power shortage. However, it is important that consumers



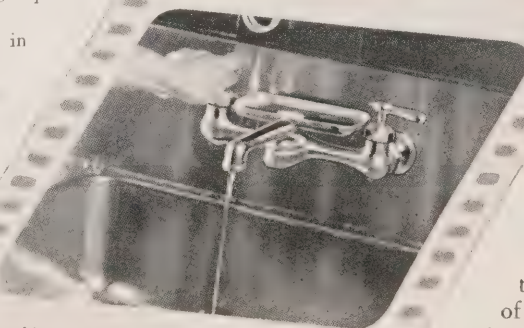
Hydro's new sound film in technicolour, "Wardens of Power", graphically portrays many ways in which electricity can be conserved.



In the "woman's workshop" a considerable amount of electricity is consumed daily. This scene focuses attention upon the refrigerator.



This "still" suggests cooking a complete dinner (left) in the oven instead of just one dish (right).



Electricity trickles down drains in thousands of Ontario homes. The cause of this needless waste can be traced to leaky hot water taps.



By using several lamps in their living room, the members of the family, shown above, are wasting precious electric energy.

be continually reminded of the necessity for saving electricity. This can be accomplished through the use of the aforementioned educational literature. It is the need for extra power to meet the critical situation that makes so necessary that we emphasize to all consumers the importance of conserving electricity. The turning on, or leaving on of one unnecessary switch is a waste of power that is urgently needed in the present emergency.

All municipalities are urged to encourage local consumers to become "Wardens of Power" in their homes. Individual savings in electricity may seem small, but collectively they become a great driving force for victory.

Says Conservation Is Patriotic Duty

Interruptions In The Supply Of Electric Power To War Plants Must Be Avoided, Commissioner J. Albert Smith Declares At District No. 7, O.M.E.A. Convention—Onus On Hydro Utilities To Enforce Restrictions

JN common with other necessary wartime restrictions, conservation of electricity is a patriotic duty which must be conscientiously discharged by public utilities and consumers alike.

This point was strongly emphasized by Commissioner J. Albert Smith at the District No. 7 O.M.E.A. convention at London where he declared, "Our gallant troops are depending on us, and we must not fail them in their hour of need."

He stressed the need of avoiding interruptions in the supply of electric power to war plants which were meeting the urgent demands of the fighting forces, and discussed the implications of the Dominion Power Controller's restrictive order, and the importance of voluntary conservation on the part of domestic consumers.

In his résumé of power conditions in Southern Ontario since the outbreak of the present war, Mr. Smith stated that the Commission has undertaken new construction and negotiated purchase contracts which, by next year, will have increased its total resources by some 851,500 horsepower over the highest pre-war peak load (December, 1938). This represents an increase in capacity of approximately 64 per cent. In spite of this, the commissioner emphasized, the overwhelming demands for power to supply war industries have exceeded the total available resources at the disposal of the Commission. As a consequence, it is estimated that during the coming fall and winter months Southern Ontario will experience a shortage of power which, without restrictions being imposed, might reach from 250,000 to 300,000 horsepower.

Heavy War Loads

Presenting examples of the heavy loads required for war production, Mr. Smith said that today single industries being supplied by the Commission take upwards of 130,000 horsepower, while several plants require loads of 50,000 and 25,000 horsepower for their individual operations. He made reference to a heavy steel furnace now being installed which, he said, has a capacity of 60 tons and will require 20,000 horsepower.

The commissioner stated that in order to meet such onerous war demands in the coming months, the Dominion Power Controller issued Order P.C.5, which became effective

on the 20th of last month, placing restrictions on the use of electric power for non-essential purposes.

"I wish to pay tribute," he continued, "to the various local commissions for the manner in which they have responded, and also commend the spirit of merchants and citizens. It is not a pleasant task at any time to have to apply measures of a prohibitive nature, and it would be very unfortunate if the support given them were half-hearted or indifferent. The Commission is grateful for your co-operation."

"As a result of the Power Controller's order," Mr. Smith continued, "our towns and cities have lost much of their picturesque night-time appearance. Those brightly illuminated advertising signs and ornamental displays no longer lend colour and glamour to our city streets. Theatres, restaurants, shops and amusement centres have toned down their radiant exteriors and decorative lighting has disappeared."

Back To "Dark Ages"

In lighter vein the speaker added: "Metaphorically speaking, I suppose we have gone back to the 'Dark Ages' for a time, but after all this is only a slight and temporary sacrifice which I am confident will be accepted in good heart by all our citizens. It means more and more essential power can be diverted to our speeding war industries."

Commenting on the text of the Order as it affects violations, Mr. Smith informed the delegates that the Hydro utilities were responsible for enforcing the restrictions specified in the Order. The clause covering such responsibility reads: "No supplier shall supply electricity for any purpose to any person who, to the knowledge of such supplier, uses electricity contrary to the provisions of this Order."

"While I am sure you will not misinterpret the trend of my remarks," observed the commissioner, "I think I should point out that any person who contravenes or fails to comply with the Order is liable to summary conviction and a fine not exceeding \$500, or to imprisonment not exceeding twelve months, or to both fine and imprisonment; but if prosecuted upon indictment and convicted, shall be liable to a fine not exceeding \$5,000, or to imprisonment not exceeding five years—or both."

(Continued on next page)

PATRIOTIC DUTY

(Continued from previous page)

He added that, according to the Order, every person who is a director or an officer of a corporation may be held guilty of the like offence unless he exercises due diligence to prevent the offence. This penalty applies not only to the consumer who does not obey the Order, but also to the supply authority itself.

Educational Programme

Mr. Smith told the convention that the Power Controller's order is expected to conserve about 100,000 horsepower in Southern Ontario, and unless he imposes additional restrictions, the balance of the anticipated shortage would have to be met by voluntary conservation in homes, offices and factories. Broadly speaking, this means that domestic consumers are called upon to conserve 150,000 to 200,000 horsepower during this fall and winter.

The attention of the delegates was drawn to an extensive educational programme now being undertaken by the Commission to make the public "conservation-conscious". Urging that an earnest effort be made by every domestic consumer to avoid the unnecessary use of electricity, the commissioner made this arresting statement:

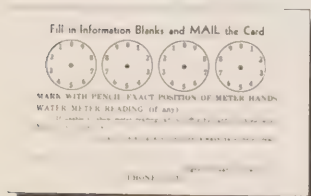
"Let me illustrate just how effective and important voluntary effort could be. We have in Ontario approximately 600,000 domestic consumers whose average consumption is around 2,000 kilowatt-hours per year. Even a 10 per cent. saving by these 600,000 consumers would make available sufficient electric power to operate continuously—24 hours a day—four plants equal in size to the largest machine-gun plant in the British Empire!"

Mr. Smith remarked that the public generally had given its ready support to the Power Controller's order and he felt the same spirited co-operation would be extended to the Commission's suggestions for voluntary curtailment.

At other points in his address the speaker touched on various wartime activities of the Commission's staff, among them being the supply of electric service to wartime housing projects, war industries, airports, air training schools, and numerous establishments associated with the war effort. He characterized the uninterrupted supply of power for the war effort as the Commission's "primary obligation," and concluded his address by saying: "As the war goes forward, our task becomes proportionately greater. Your understanding of our problems, and your willingness to co-operate with us in the future, as you have in the past, will enable us to discharge our obligations to the very limits of our energies and capacity."

CO-OPERATION AT
SUDBURY

At Sudbury when the Hydro man finds nobody home, he simply leaves the postage-paid postcard (left) at the premises. The householder reads his own meter, fills in the required information and mails it to the Sudbury Commission. This saves man-hours, tires and gasoline.

GORDON McLEOD PASSES AWAY
FOLLOWING SEIZURE AT WORK

Members of every department in the H.E.P.C. Administration Building, Toronto, were stunned by the news on Saturday morning, October 17, that Gordon "Mac" McLeod had passed away. Only the day before he had been on the job as usual.

Mr. McLeod, who was 58 years of age, had been associated with the Commission for more than 20 years, and had held the position of building superintendent since 1937.

A native of Hunter River, P.E.I., he went to British Columbia as a young man, and was employed for many years in the mining and lumbering industries in that Province, while he also worked for a time in Northern Ontario. In 1916, he returned to Prince Edward Island where he farmed until 1922 when he joined the construction staff of the H.E.P.C. as a rock foreman at the Chippawa Canal job. In 1926, Mr. McLeod became engaged in station construction work and, ultimately, served as general foreman for four years at the building of the Leaside station.

George Eifert of Tavistock, who became a director of District No. 6, O.M.E.A., in 1941, was re-elected to the office at the recent convention in Galt.



George Eifert

Mr. Eifert was born in Tavistock, where he received his education and entered business. For 37 years he has operated his own hardware shop and heating and plumbing business, and since 1911 has been responsible for certain phases of the town's water-works system. He has been a member of the Tavistock Public Utilities Commission for some 22 years—a long record of service—in behalf of Hydro and other public enterprises.

President of the Georgian Bay Municipal Electric Association, **R. Dawson Boyes** was born in the Township of Nottawasaga, receiving most of his education in the Village of Creemore. Coming to Alliston, he entered the butchering and live stock business in which he is still engaged.



R. D. Boyes

Being actively interested in public affairs, Mr. Boyes became a member of the local Public Utilities Commission in 1933 and its chairman in 1936, a position he has filled since that time. He also serves on the Parks Committee and the Fair Board.

After a lengthy association with the Georgian Bay Municipal Electric Association, Mr. Boyes last year became first vice-president and this year was the unanimous choice for president. He is a member of the executive

committee of the O.M.E.A.

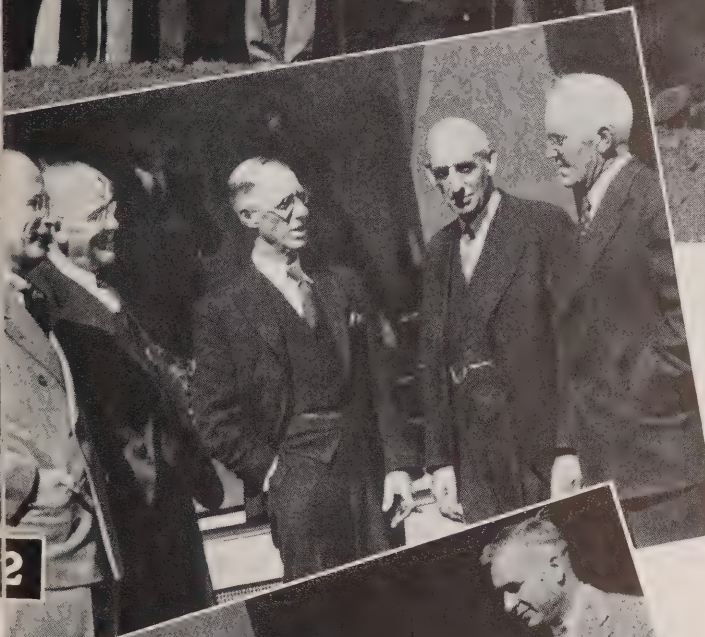
Mr. Boyes is proud of his two sons, both of these "Boyes" now serving with the armed forces. He enjoys a rousing game of bowling or curling and relishes a keen hand of bridge.



1

DISTRICT No. 5 O.M.E.A. CONVENTION

PORTRAYED on this page are five camera impressions of District No. 5 annual convention at Dundas. No. 1 shows the delegates in a group, while the five in No. 2 are, from left to right, K. A. Christie, K.C., Toronto, president of the O.M.E.A.; H. O. Hawke, Galt; A. J. Naish, Port Dalhousie; Percy Holmes, St. Catharines, and Mayor Robert Worthy of Brampton. No. 3 (From left to right) D. P. Cliff, H. C. Robinson, George Austin and H. W. Lawson, all of Dundas. No. 4 (From left to right) Keith MacLeod, Stamford Township; George Austin, Dundas; Roy Peirson, Brantford Township; Carl Hanniwell, Niagara Falls; Rev. Norman Rawson, speaker; J. H. Caster, H.E.P.C. No. 5 (From left to right) Mrs. R. P. Worthy, Brampton; Mrs. Gordon Thede, Smithville, and Mrs. R. C. Topp, Smithville.



Further Cut Anticipated In Use Of Electricity

R. T. Jeffery, Chief Municipal Engineer Of The H.E.P.C.,
Says Initial Restrictions Not As Rigorous As
Expected—Addresses District No. 5
O.M.E.A. Convention

A MORE drastic curtailment in the use of electricity, particularly in the home, may be necessary to enable Hydro to meet the increasing load demands of war industries.

This prediction was made at the recent annual convention of District No. 5, O.M.E.A., at Dundas where many delegates, representing local commissions and utilities in the greater Niagara district, were in attendance.

R. T. Jeffery, chief municipal engineer, H.E.P.C., expressed the opinion that the initial restrictions imposed by the Dominion Power Controller were not as rigorous as had been generally expected. After reviewing the power situation in the Province since the outbreak of war and showing what steps the Commission has taken to provide new generating sources, Mr. Jeffery said that war load demand would necessitate more far-reaching restrictions as time goes on. He also told the delegates that significant results were already being obtained from voluntary curtailment and urged that domestic consumers be made fully aware of the important contribution they can make to the nation's war effort.

Among civic officials attending the convention were Mayor William Morrison of Hamilton and Mayor Robert J. Hunter of Dundas, both of whom reiterated the necessity for accepting wartime power restrictions in good grace. "War industries must have the power to produce", Mayor Morrison declared, "and we cannot win this war by easy methods."

Other speakers dealing with the conservation programme and various aspects of Hydro's war responsibilities were Dr. W. J. Chapman of St. Catharines, former president of the O.M.E.A., and Messrs. H. D. Rothwell and J. H. Caster of the Commission's engineering staff. The appreciation of the convention was conveyed to all those who took part in the discussions by Keith C. MacLeod of Stamford, chairman of District No. 5.

The meeting passed a resolution favouring the adoption of a standardized type of switch for electric stoves.

Accepting the cordial invitation of Mayor H. A. Collins of St. Catharines, the delegates selected that city as their convention centre for 1943.

At the luncheon meeting of the District, Captain the Reverend Norman Rawson of Hamilton was guest speaker. George Austin, chairman of the Dundas Public Utilities Commission, presided, while a vote of thanks to the speaker was sponsored by Kenneth A. Christie, K.C., president of the O.M.E.A.

O.M.E.A. and A.M.E.U. Convention Dates Set

Joint Winter Meeting To Be Held
February 9 and 10 At Royal
York Hotel, Toronto

Tuesday and Wednesday, February 9 and 10, 1943, are the dates set for the annual joint winter convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, while the place will be the Royal York Hotel, Toronto.

This announcement was released following a recent meeting of the Inter-Association Committee which comprises three executives from each association. Representatives of the O.M.E.A., this year, are: K. A. Christie, K.C., Toronto, president; W. R. Strike, Bowmanville, vice-president, and Miss K. Ciceri of Guelph, secretary-treasurer. A.M.E.U. representatives are: V. A. McKillop, London, president; R. B. Chandler, Port Arthur, vice-president, and S. R. A. Clement, H.E.P.C., Toronto, secretary.

In accordance with established practice, both associations will conduct separate sessions during which subjects of specific interest to each group will be discussed. Dr. Thomas H. Hogg, chairman and chief engineer of The Hydro-Electric Power Commission of Ontario, will be asked to address a joint session on Tuesday afternoon, February 9. Members of the Electric Club of Toronto are being invited to the Wednesday luncheon.

Arrangements are being made to secure outstanding speakers for the convention luncheons and dinner. At the latter event, entertainment in keeping with the standard of previous years will be provided.

Following the meeting of this joint committee, the A.M.E.U. Executive, Papers and Convention Committees met to discuss programme arrangements. Subjects tentatively suggested for presentation include "Non-Metallic Substitutes," "Electric Steel Furnaces" and "A.R.P. As It Affects Public Utilities."

It has been suggested that the committee on Accounting and Office Administration should adjourn to the convention hall following breakfast and complete their deliberations prior to the presentation of the paper obtained by the Papers Committee for that morning.

V. A. McKillop, president of the A.M.E.U., as the representative of that group on the Canadian Engineering Standards Association Committee on Pole Line Hardware, reported on the work which had been done to bring about standardization for the purpose of conserving metals. He made particular reference to suggested standards for secondary brackets which are to be submitted for study and comment. The Regulations and Standards Committee of the A.M.E.U., has been instructed to assist in this matter.

Invest In Victory — Enjoy Security

MOTION PICTURE STAR APPEARS AT HYDRO VICTORY LOAN RALLY



Introduced by Dr. Thomas H. Hogg, Walter Pidgeon
Makes Stirring Plea For Greater Voluntary Sacrifice
—Urges All Canadians To Support New Bond Issue
To The Limit

Canadian-born Walter Pidgeon, star of such outstanding pictures as "Mrs. Miniver" and "How Green Was My Valley", made another smash hit when he appeared in person before a mass gathering of H.E.P.C. employees on the Administration Building grounds on Friday, October 16, in support of Canada's Third Victory Loan Campaign.

Dr. Thomas H. Hogg, chairman and chief engineer, H.E.P.C., referred to the distinguished guest as a Canadian who has attained outstanding success on both sides of the border. Born in St. John, New Brunswick, Mr. Pidgeon ultimately turned to the theatre after a business career in the United States, and in recent years had risen steadily to the highest peak of popularity and success in motion pictures, Dr. Hogg stated.

"Your Government is not asking you to give anything," Mr. Pidgeon declared, "you are merely asked to lend what you can spare. We in North America are not making enough sacrifices willingly and voluntarily. We wait until the Government orders us to do something, and then we accept it. That is not the spirit in which sacrifices should be made. Our boys in uniform are ready to sacrifice their lives, while we are only called upon to invest our money at a good rate of interest. There is no finer investment than the purchase of a bond which represents a mortgage on the whole of the Dominion of Canada. We must show the world that the Canadian on the home front is capable of just as great sacrifices as the other fellow. Buy Victory Bonds!"

STORM TROOPS

(Continued from page 5)

belt, pole strap and climbing spurs, and wears rubber gloves whenever necessary. Among his many personally owned tools are pliers, adjustable wrenches, skinning knife, hammer, screw driver and connectors. Because of the many hazards they meet daily, these linemen are trained in first-aid, and are proficient in the prone-pressure method of resuscitation from electric shock.

In the populated regions of Southern Ontario the Commission does not supply housing for the repairmen, as accommodation is usually available, but travelling gangs have their room and board provided at hotels as they move from one job to another. District patrolmen generally live within a short distance of a high-tension station, and their work is of such a nature that they are seldom away from home for extended periods. In the remote and less accessible districts of the Province, however, particularly the far north, the Commission supplies housing for the men.

Although the risky work performed by these men at all hours of the day and night escapes public notice because it is carried on silently behind the scenes, it is not lacking in drama and feats of daring as they brave the full fury of nature unleashed.

In the far northern areas of Ontario, in the midst of wilderness, patrolmen have to set out on repair jobs in isolated districts, and in winter their task is doubly difficult. They have to cut their way across miles and miles of forbidding ice fields and deep snow by the use of dog teams, fighting the persistent threats of frostbite and almost irresistible blasts of howling winter wind. At times, they have to go to the job by plane, roaring over miles of frozen forest and chains of snowbound lakes and islands. But onward they go, ceaselessly, relentlessly, to repair those gleaming ribbons that carry power to mining centres and remote outposts of civilization.

Push Steadily Ahead

Emergency repair gangs in Southern Ontario often have to sweep hundreds of miles across the Province to handle a major breakdown on a high-tension transmission line, while fiercely beating rains and washed out roads make travel almost impossible. Their perseverance carries them through in terrifying storms, cyclonic winds, and

Coup De Grâce

(The Editor can personally vouch for the authenticity of the following story.)

Daddy had gone to a great deal of trouble to explain to his bright two-year-old son, Michael, that Hydro wanted them to save as much electricity as possible so that more planes, tanks, ships and guns could be made to beat Hitler. For many nights, Michael thoughtfully watched his daddy putting smaller light bulbs in the lamps in the living room and switching off lights which were not required.

And then one evening the two were out walking near their Islington home. Michael stopped suddenly and looked up at the sky with a questioning look. After about a minute had elapsed, the little fellow said, "Daddy, isn't the moon very small tonight?" "Yes, son," answered daddy, "the moon gets smaller as it wanes." Back like a shot came the question, "Daddy, is God saving light too?"

extreme temperatures. They push steadily ahead, racing into the night, never pausing, never complaining. Nothing matters until that vital repair is made. These dogged "Storm Troops" swing aloft on quivering towers and poles and carry on their work under most perilous conditions. The low, groaning rumble of thunder mounts to a deafening roar, pounding and crashing in uncontrollable anger, until the very earth beneath them trembles. Fierce bolts of lightning rip through the sky and streak downwards, and wild winds lash the pouring rain. Every window in every home is tightly shut and thousands of citizens sit in comfort and safety, sheltered from the tempestuous outbursts of nature, but Hydro's courageous brigades of experts carry on hour after hour to keep those home lights burning.

These men live dangerously. They are the real "Storm Troops."

"BEFORE"



"AFTER"



The illustration on the left shows how King Street, Kitchener, looked before the restrictions in the use of electricity became effective. The same street is shown on the right after the Dominion Power Controller's order had been enacted.

Hydro Lineman Decorated For Gallantry At Dieppe

RANKING next to the Victoria Cross in military awards, the Distinguished Conduct Medal has been awarded to Sergeant George Hickson of the Royal Canadian Engineers, and formerly a Hydro lineman with Elmira rural power district, for "determined leadership and high qualities of initiative" during the raid on Dieppe.

Singled out for special mention along with Lieut.-Col. C. C. I. Merritt, who was awarded the Victoria Cross, Sgt. Hickson is one of the twelve Canadian non-commissioned officers to receive the D.C.M. for gallantry on the occasion of this historic raid.

The official citation reads:

"Lance-Sgt. Hickson was in charge of a group charged with destroying the main telephone exchange in the Post Office. Finding the fire on the beach too heavy to move directly to his target, he assisted an infantry platoon in mopping up enemy machine gun positions and destroyed a three-inch gun by detonating a three-pound charge on the breach.

"When the platoon commander and most of the senior N.C.O.'s were put out of action, Hickson assumed command and led the platoon to the casino where strong enemy opposition was nullified. Using explosives, he blew his way through the walls to reach a large concrete gun emplacement; then another charge blew in the steel door killing a gun crew of five. He then destroyed the six-inch naval gun and two machine guns after infantry had cleared out the post.

"Lance-Sgt. Hickson then reorganized his platoon and despite heavy enemy opposition led them into the town as far as the St. Remy Church. Unable to find brigade headquarters and being without support he withdrew his party to the casino. Lance-Sgt. Hickson throughout the day showed determined leadership and high qualities of initiative and was among the last group to evacuate."

This Canadian Dieppe hero is 28 years of age and is the son of George Hickson, Sr., of 42 Troy Street, Kitchener, who is a line department foreman with the Bell Telephone Company and an ex-serviceman. He is one of four brothers who are serving with the armed forces. A fifth brother, who is 18 years old, will be accepted by the R.C.A.F. when he reaches the minimum enlistment age.

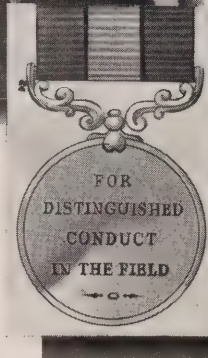
Sgt. Hickson, who enlisted in the R.C.E., at London, Ontario, in January, 1940, went overseas in May of the same year. He resided at 111 Victoria Street South, Kitchener. He is married and has two children, George, 6, and Larry, 4.

Recognized as a keen soldier, he was Company Sergeant-Major of A Company, Scots Fusiliers of Canada when the war broke out, and is a former president of the sergeants' mess.

Sgt. Hickson is a native of Kitchener and was educated at St. Mary's School and the K-W Collegiate. Keenly in-



This is Sergeant George Hickson and a reproduction of the D.C.M., which this Kitchener-born Hydro man received for outstanding bravery and service during the raid on Dieppe.



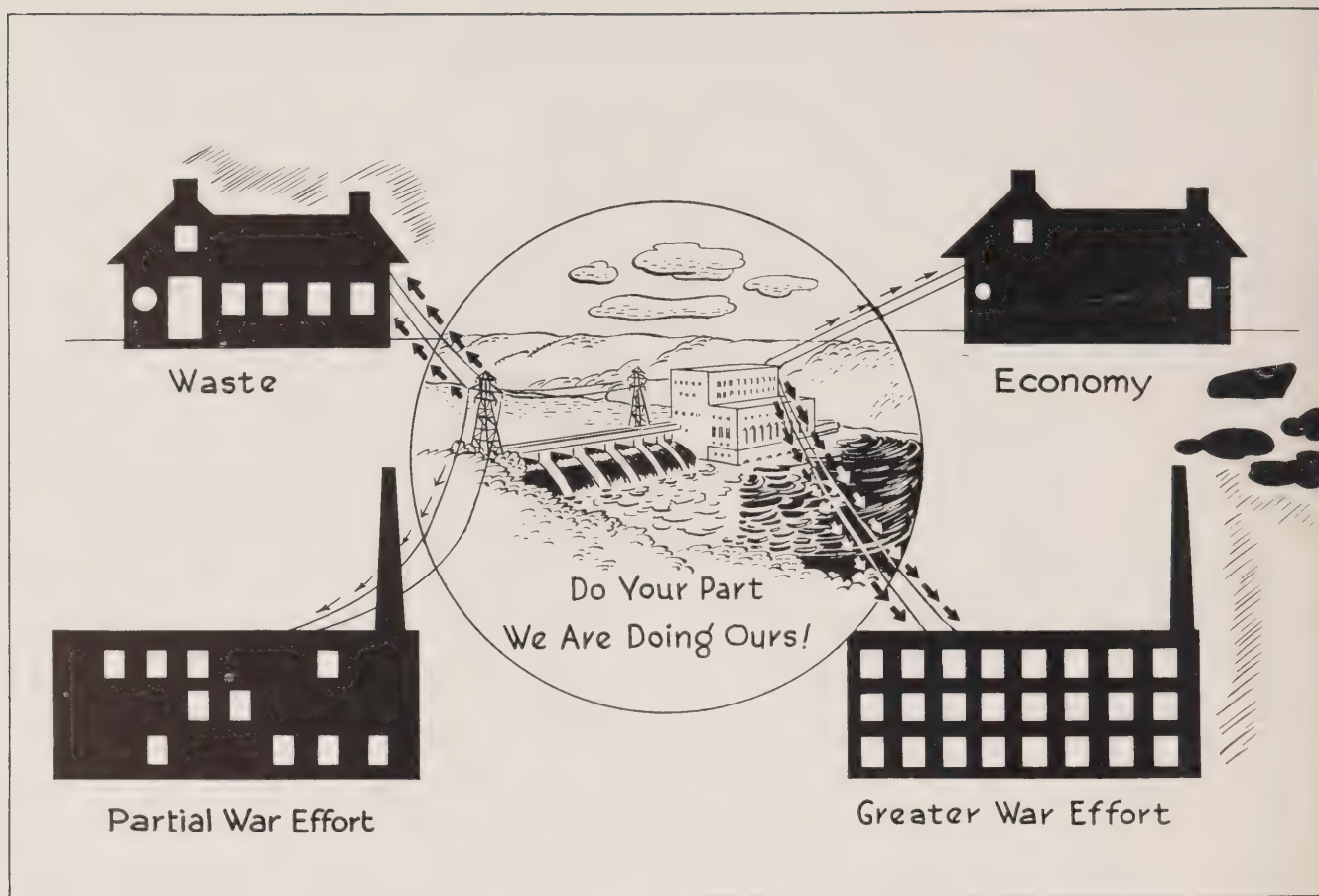
terested in sports, he played for one of the collegiate rugby teams.

Upon graduation, he started work with the Bell Telephone Company and later became a Hydro employee in the service of Elmira rural power district in October, 1936. He was soon promoted to the position of lineman and was engaged in regular construction and maintenance work until his enlistment in the Royal Canadian Engineers.



SIGNS 100,000TH APPLICATION

While W. A. Armstrong of the Employee Relations Department, H.E.P.C., looks on, Miss Nancy Fulton of the Operating Department, signs the 100,000th application form issued by the Ontario Hospital Association. The majority of the members of the H.E.P.C. head office staff are affiliated with this group hospitalization scheme which is operated on a non-profit basis.



EVERY LITTLE HELPS

By C. J. Vick

ASSISTANT ENGINEER, H.E.P.C.

A GREAT machine turning out essential war material completes an operation. Allister McAllister wipes his brow and pulls the switch that disconnects the 1,000 horsepower motor driving the great mill. At the same instant, in an electric generating station hundreds of miles away, the sensitive governors of the turbines driving the great generators respond to the temporary decrease in the demand for power. Even before the factory motor has come to rest these governors are adjusting the "gates" which admit water to the turbine. Thus, less water is drawn from the storage reservoir and more conserved to generate power for the next wartime job.

Sensitive Governors Respond

Meantime at home, Mr. McAllister's wife carefully prepares a complete meal which can all be cooked in the oven, thereby requiring a minimum use of electrical energy. Her friends and neighbours are doing the same thing; and again the sensitive governors of the power plant respond to the decreased load, and more water is saved to be used later in driving the turbo-generators supplying power to the machines with which their husbands fashion the tools to finish the job.

Today, factories are working 24 hours a day, ceaselessly

turning out munitions and equipment to back up our men in the firing line, and ample electric power must be available, at all times, for this vital production job.

If industrial electrical equipment is operated two or three times as many hours per day as under peacetime conditions, it will consume two or three times the number of kilowatt-hours of energy. To supply this additional energy the turbines in the generating station will require larger quantities of water every day.

Peak Demand for Power

What is known as the peak demand for power usually occurs late on dark winter afternoons when the lighting load comes on before certain factories shut down for the day. In some cities, the daily peak demand occurs just before noon when the housewives are preparing the midday meal on their electric ranges. Even if a hydro-electric generating station is equipped to supply the horsepower required to meet this peak demand, there still may not be enough water in the reservoir to keep the turbo-generators running near top capacity for many extra hours per day.

Thus under war conditions the saving of energy by economical and careful management in the home is an essential and valuable contribution to the war effort.

Around the Hydro Circuit

HYDRO
News

John Bevan Hay, chairman of the London Public Utilities Commission and an executive member of the O.M.E.A., was born in 1884 at Morpeth, Ontario, near Lake Erie. "Bev" to his coterie of friends, he received his education at the Ridgetown Public School and Collegiate Institute.



John Bevan Hay

Shortly after his student days the Hay family headed for St. Thomas, where "Bev" joined his father in business. His next move was to Pittsfield, Mass., to enter a stationery firm which later transferred him back across the border as its Canadian representative. For some years past he has conducted his own business, being president of the Hay Stationery Company, London, Ontario. He resides in Westminster Township, just beyond the London city limits.

Mr. Hay has been a member of the London Commission for the past six years, the last four as chairman. When O.M.E.A. District No. 7 was organized in 1938, he was named director. Last month the district convention elected him as president, and at the next annual meeting of the O.M.E.A. parent body he will automatically become a vice-president.

A man of varied interests, Mr. Hay is a governor of the University of Western Ontario, and a prominent member of fraternal societies. He is also affiliated with a number of business corporations. Mr. Hay has three children, a girl and two boys, one of whom is overseas. Hobbies? Yes—golf, hunting and fishing.

Garnet A. Edwards is a disciple of the axiom that a busy man is a happy man. Born in Essex County in 1886, Mr. Edwards is chairman of the Windsor Public Utilities Commission, president of District No. 8, O.M.E.A., and a vice-president of the Ontario Municipal Electric Association.



G. A. Edwards

A public-spirited citizen of Windsor for 50 years, Mr. Edwards has served over half of that time in municipal office, acting as alderman and serving many years as a member of the Water Board. He played an important role in the early days of the Windsor Utilities Commission and was given the responsibility of coordinating the three public services at the time of amalgamation.

Mr. Edwards recalls with pleasure the first visit of Sir Adam Beck to Windsor, during a campaign preceding Hydro's advent to the city. He was strongly influenced by the public ownership ideal, and during his period in city council, was a frequent delegate to Hydro meetings and conventions.

In private life Mr. Edwards has contributed to the progress of the city by undertaking the construction of many fine apartment buildings, and he is associated with a number of fraternal societies. Though not a golfer, he is an enthusiastic devotee of the great outdoors, specializing in stalking moose in the northern wilderness.

Newly-elected first vice-president of the Georgian Bay Municipal Electric Association for 1943, J. R. Beaulieu was born in Penetanguishene, Ontario. Contrary to convention, he did not forsake his home town at a tender age and trek onward to the big city, but preferred to remain true to his native soil. In the years that followed he has served his birthplace in a great many capacities.



J. R. Beaulieu

Upon his return from three years of active service in the Great War of 1914-18, Mr. Beaulieu took considerable interest in public affairs. In 1921 he was elected alderman on the town council and he subsequently served as reeve, mayor and county councillor. A member of the Public Utilities Commission since 1928, he is at the present time chairman. His administrative experience led to his appointment to the executive of the Georgian Bay Municipal Electric Association at the time of its inception, culminating in his election as first vice-president for the coming year.

The new officer is a widely known figure in community life and is associated with the wholesale tobacco firm of Richardson and Beaulieu in Penetanguishene.

George W. Howse, Hamilton district electrical inspector of the H.E.P.C., has been elected first vice-president of the International Association of Electrical Inspectors at its recent convention in Detroit.



G. W. Howse

Born in Beamsville, Ontario, where he received his early education, Mr. Howse entered the electrical field in the town of Almonte and later spent five years with the Canadian General Electric Company. He joined the Hydro Commission in 1910 as Chief Operator of St. Thomas station, and in 1914 took over the inspection duties for the district. From there he was transferred to Hamilton in 1919, where he has since remained.

Victor F. Hunt, Superintendent of the Hespeler Hydro-Electric Commission, passed away recently at the age of sixty-two years. Born in England, Mr. Hunt had lived in Canada since early childhood. For a number of years he was Hydro Superintendent at Gravenhurst, and went to Hespeler in 1926 to act in a similar capacity. He was actively identified with the Niagara district Hydro-Electric Association and played a leading part in the civic life of Hespeler. A prominent member of various fraternal societies and service clubs, and well-known as a devout churchman, Mr. Hunt also served on the directorate of Freeport Sanatorium. Surviving are his widow; a son; a daughter; and three sisters.



V. F. Hunt

War Load Increases

The monthly summary of loads indicates a total primary load increase of 15.4 per cent for August, 1942, over the corresponding month last year.

Based on the maximum 20-minute peak horsepower load for the respective months, this increment takes into account the activities of all four H.E.P.C. systems and the Northern Ontario Properties. The most noticeable gain took place in the Niagara system, where an increase of 276,407 horsepower was recorded, resulting mainly from the steadily expanding production effort of war industries.

The August, 1941, total peak demand for primary load was 1,841,299 horsepower, while for August of this year it rose to 2,125,270 horsepower. Combined primary and secondary loads for all four systems and the Northern Ontario Properties totalled 2,149,131 horsepower, an increase of 5.1 per cent over the 2,045,119 horsepower load during August, 1941.

Restrictions, announced recently by the Dominion Power Controller to curtail non-essential uses of electricity in designated "power shortage areas" are expected to effect a saving of 100,000 horsepower representing approximately a third of this winter's total estimated shortage in Southern Ontario which is served by the Niagara, Eastern Ontario and Georgian Bay systems.

This leaves a shortage of 200,000 horsepower which will have to be made up by voluntary conservation.

A tabulation of combined primary and secondary loads for the respective months follows:

	PRIMARY AND SECONDARY LOADS		Per Cent Increase
	Maximum 20-Min. Peak H.P. August, 1942	August, 1941	
Niagara System	1,602,949	1,463,137	9.6
Eastern Ontario System	175,965	168,525	4.4
Georgian Bay System	50,266	47,468	5.9
Thunder Bay System	99,598	100,201	-.6
Northern Ontario Properties	220,353	265,788	-17.1
Total of all systems	2,149,131	2,045,119	5.1

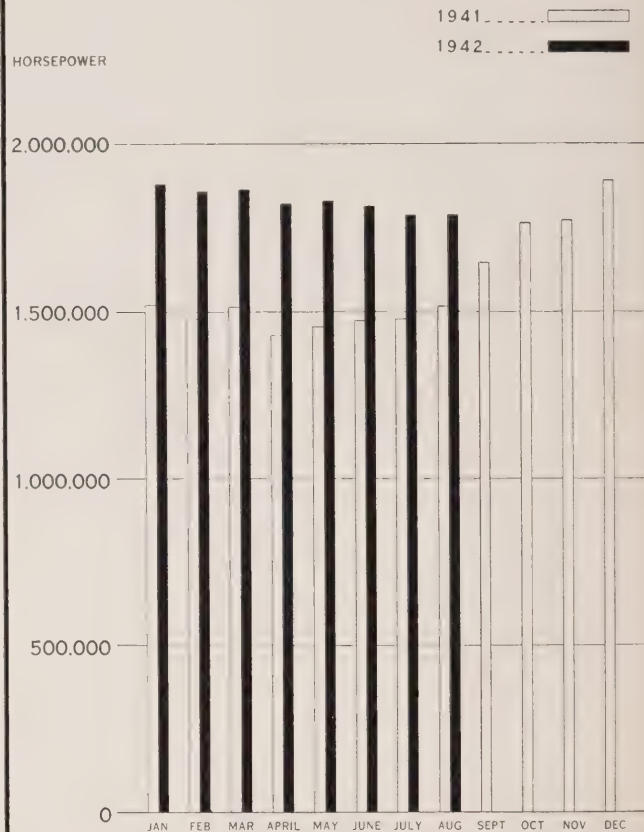
YOUR ATTENTION PLEASE

Secretaries and managers of municipal Hydro utilities are asked to co-operate in facilitating delivery of Hydro News to their commissioners as soon as copies arrive at their offices each month.

This request emerged from a discussion at an O.M.E.A. executive committee meeting recently when it was stated that many local commissioners had not been receiving their copies of Hydro News. The Editor has been asked to make this fact known in order that action may be taken by local officials to iron out the difficulty and make everybody happy.

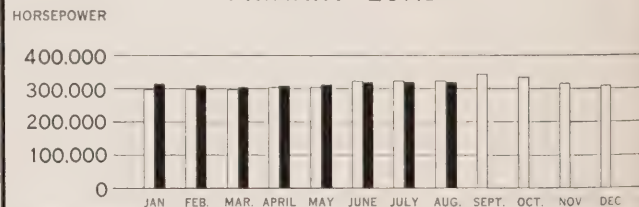
SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	AUGUST 1942	AUGUST 1941	
NIAGARA SYSTEM	1,579,088	1,302,681	+ 21.2
GEORGIAN BAY SYSTEM	50,266	47,468	+ 5.9
EASTERN ONTARIO SYSTEM	175,965	168,056	+ 4.7
THUNDER BAY SYSTEM	99,598	100,201	- 0.6
NORTHERN ONTARIO PROPERTIES	220,353	222,893	- 1.1
TOTAL	2,125,270	1,841,299	+ 15.4



WARNING

*The sharp ears of Enemy Agents
are always listening
for scraps of information*

**DON'T LET YOUR CARELESS
TALK HELP THE ENEMY**

DO NOT DISCUSS

SHIP MOVEMENTS
DEFENCE PLANS
MUNITIONS FACTORIES
TROOP MOVEMENTS
HARBOUR FACILITIES
AIRCRAFT PRODUCTION
SUPPLY STORES

BE ON YOUR GUARD

Don't Waste

HYDRO

THERE IS A POWER SHORTAGE

● Hydro powers hundreds of plants that produce the weapons to bring peace. The tempo of the war effort is increasing . . . More weapons must be produced . . . As a result, the demand for electricity is intensified.

Before the War . . . there was power to spare . . . Now, even with greatly increased supplies . . . as a result of important new developments, either completed or under construction . . . a critical power shortage threatens our War effort.

To meet this shortage, lights in streets, shops, show windows and signs are being strictly curtailed or turned out, by Order of the Dominion Power Controller. This however, will provide only part of the saving necessary.

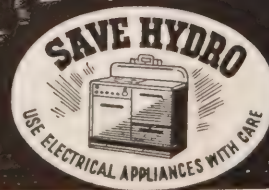
Why these restrictions now? The effect of the shorter hours of daylight and the seasonal changes in the use of electricity during the Fall and Winter months together with added war load, impose greatly increased demands on present plants now loaded to capacity.

ELECTRICITY MUST BE CONSERVED —UNTIL THE WAR IS WON

Each one of us must do our "bit." In the home, office or shop, the "turning-on" of one unnecessary switch is a waste of Hydro. Our War plants must have the power they need. Do your part—see that they get it! Save electricity today and every day in every way possible.



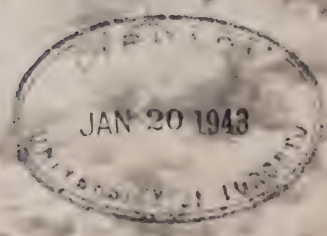
Picture shows a power canal blasted through rock, an important part of a recent Hydro power development.



Gov. Doc.
Ont.
H

HYDRO News

ABQNEP
-1195



"HORSEPOWER"

AN *Acute* POWER SHORTAGE THREATENS OUR WAR EFFORT



Save **ELECTRICITY**

WHEN WASHING AND IRONING

● There is a serious power shortage. War industries need more electrical energy to produce the weapons for victory. The homemaker can help to meet this emergency by conserving electricity wherever and whenever possible and at the same time make a worthwhile contribution to the war effort. Each one of us can do our part, like little drops of water the accumulated savings in each home can become a flood of power to increase war production.

Electricity is vital to Victory. Save it.

HERE ARE A FEW CONSERVATION SUGGESTIONS

- Fill washing machine to water line only. Do not use more hot water than needed.
- Pre-soak badly soiled clothes to reduce washing time.
- Do not leave washer operating longer than necessary to wash clothes. Use full-rated load of washer whenever possible.
- When possible use wringer at the same time as clothes are being washed.
- Do not let your iron over-heat.
- Press fine fabrics while iron is heating. Turn iron 'OFF' and use stored heat for clothes that only need dampness removed.
- If you heat water electrically use it sparingly. Never wash hands, clothes or dishes under running hot water. Turn hotwater taps right off . . . repair leaky taps promptly.

THE HYDRO-ELECTRIC POWER COMMISSION
OF ONTARIO



Invest in **VICTORY** *Save* **ELECTRICITY**

Buy War Savings Certificates Every Pay Day

HYDRO News

formerly The BULLETIN

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC
POWER COMMISSION OF ONTARIO,
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AND CHIEF ENGINEER.

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The Front Cover



This month's front cover is a symbolic photographic creation by J. H. Mackay of the Commission's head office staff. Mr. Mackay has sought to express the idea that it takes water power to produce the "horse-power" which is the driving force behind Ontario's ever-accelerating war production programme. This illustration shows one in the series of picturesque falls on the Madawaska river, while the horses featured in the montage were actually pulling a plow down on the farm when they were photographed.

Volume 29

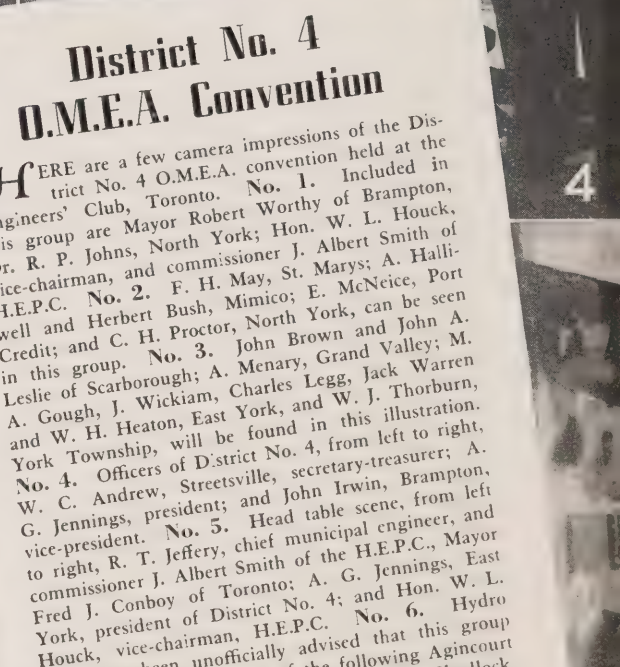
November 1942

Number 11

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District No. 4 O.M.E.A. Convention

HERE are a few camera impressions of the District No. 4 O.M.E.A. convention held at the Engineers' Club, Toronto. No. 1. Included in this group are Mayor Robert Worthy of Brampton, Dr. R. P. Johns, North York; Hon. W. L. Houck, vice-chairman, and commissioner J. Albert Smith of H.E.P.C. No. 2. F. H. May, St. Marys; A. Halliwell and Herbert Bush, Mimico; E. McNeice, Port Credit; and C. H. Proctor, North York, can be seen in this group. No. 3. John Brown and John A. Leslie of Scarborough; A. Menary, Grand Valley; M. A. Gough, J. Wickiam, Charles Legg, Jack Warren and W. H. Heaton, East York, and W. J. Thorburn, York Township, will be found in this illustration. No. 4. Officers of District No. 4, from left to right, G. Jennings, president; and John Irwin, Brampton, vice-president. No. 5. Head table scene, from left to right, R. T. Jeffery, chief municipal engineer, and commissioner J. Albert Smith of the H.E.P.C., Mayor Fred J. Conboy of Toronto; A. G. Jennings, East York, president of District No. 4; and Hon. W. L. Houck, vice-chairman, H.E.P.C. No. 6. Hydro News has been unofficially advised that this group may include one or more of the following Agincourt representatives: A. M. Walton, Roy R. Shadlock, J. F. Franks and J. E. Burrows.



* Page Three *

High Honour For Hydro News

THERE is reason for pardonable gratification in the fact that Hydro News has received one of the five awards in the house organ classification of the Canadian Direct Mail Leaders Contest for 1942.

News of the award came just as the presses were being geared to roll off the November issue.

The announcement of the winners in this contest, which recognizes outstanding achievements in the advertising and publishing fields in Canada, was made during the recent convention of the Association of Canadian Advertisers in the Royal York Hotel in Toronto where all the prize-winning exhibits were on display.

Such an honour will prove an inspiration in seeking to attain a still higher standard of service to the readers of Hydro News.

A Vote of Thanks Is In Order

BY their magnificent response to the call for voluntary conservation of electricity, Ontario's domestic consumers in power shortage areas have rendered a timely service to Hydro and a patriotic service to Canada and all the United Nations.

It is still too early to make an accurate statistical appraisal of the results of this saving. Present indications, however, inspire confidence that Hydro, with the continued co-operation of these consumers, will this winter be able to meet its wartime obligations during the dark days ahead when the heaviest load demands of the year will be made upon the Commission's power resources.

It can be readily understood that war planning and forecasting of power loads present problems which do not arise in peacetime. War loads pile up at irregular intervals and must be taken care of in addition to the normal trend. Dr. Thomas H. Hogg, chairman and chief engineer of the H.E.P.C., and his colleagues on the Commission, Hon. W. L. Houck, vice-chairman, and commissioner J. Albert Smith, have directed attention to these problems in recent public addresses.

In planning ahead, the Commission obtains the most reliable information possible concerning the establishment of new war indus-

tries and the character of their loads. The government, however, cannot always anticipate new developments twelve months ahead. Quite frequently new war plants come into operation ahead of scheduled dates and, at other times, they may be several weeks late. As a result, the H.E.P.C. is faced with many complications in its wartime planning.

At present, however, the Commission has been greatly heartened by the spontaneous co-operation of domestic consumers and municipal Hydro systems, while consumers who are subject to the Power Controller's restrictions have also been quick to recognize the need for curtailment.

This is the kind of co-operation which is going to accelerate the production of the tools of victory and hasten the time when "Lights Will Go On Again All Over The World."

Just In Case

FEATURED in this issue of Hydro News are pictures and a story which direct attention to the A.R.P., and fire protection system which has been established in the Commission's head office building in Toronto.

It is of more than passing interest that this system should have prompted the highest commendation from Fire Chief George Sinclair of Toronto, and that many building managers on this continent have been asking for information concerning this important auxiliary service which was organized by Fred Robertson, H.E.P.C. administration building manager.

Christmas Cheer

FEARS that the glittering Christmas tree and its tinselled glamour would be power shortage victims during the coming festive season have been allayed by the Dominion Power Controller.

Restriction Order P.C. 5 has been relaxed to the extent that Christmas trees and Christmas decorations, "Within the Home", will be permitted during the period December 24, 1942, to January 1, 1943.

The change in the Order specifically states "Within the Home", and therefore does not include Christmas trees or illuminated decorations on the front lawns of homes or similar lighting in stores or other places.

Photographs accompanying this article graphically portray the vital role of electricity in speeding the tools of victory. At the same time, they focus attention upon the important contribution of Hamilton to Canada's war effort. Left—An oven which extracts gas and tar from coke. Moving parts are operated by electric energy.

"AMBITIOUS CITY"

HYDRO, which has kept pace with Hamilton's progressive march along the peacetime highways of industrial, economic and social achievement and expansion, is today the vital nerve centre of that city's humming network of war industries in which 50,000 workers are forging the weapons of victory on a scale which places the "Ambitious City" high on the list of Democracy's arsenals.

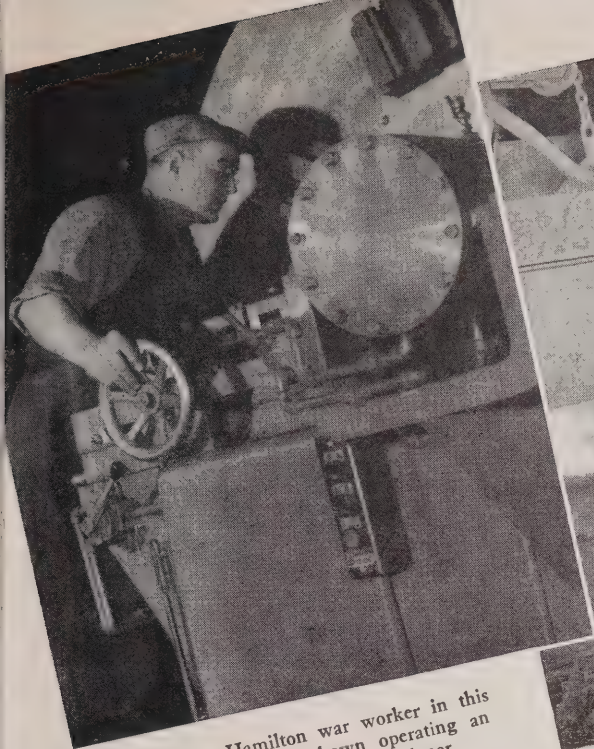
In this Ontario city, where 54.6 per cent of all the steel output in the Dominion is produced, the Hamilton Hydro Commission is feeding two-thirds of its total available energy into war production channels. Last year, the peak load soared to 160,000 horsepower. This year, even with a cut of 10,000 horsepower effected through restrictions and voluntary conservation of electricity, the peak is likely to touch 180,000 horsepower. Speaking about voluntary conservation A. W. Bradt, general manager of the Hamilton Hydro System, paid a very high tribute to Hamilton's domestic consumers of electricity. "We have received whole-hearted co-operation," he said, "and we would like to express our appreciation. Such co-operation means a great deal in speeding our war effort."

Already, the Commission, comprising Mayor William Morrison, chairman; H. P. Frid, vice-chairman, and Dr. N. V. Leslie, commissioner, has worked in co-operation with the city council to bring about a reduction of 39 per cent. in street lighting.

These electrically-operated spindle drills handled by girls, turn out parts for naval guns.

This historic, century-old building at 12 King Street East, is "G.H.Q." of Hydro in Hamilton.

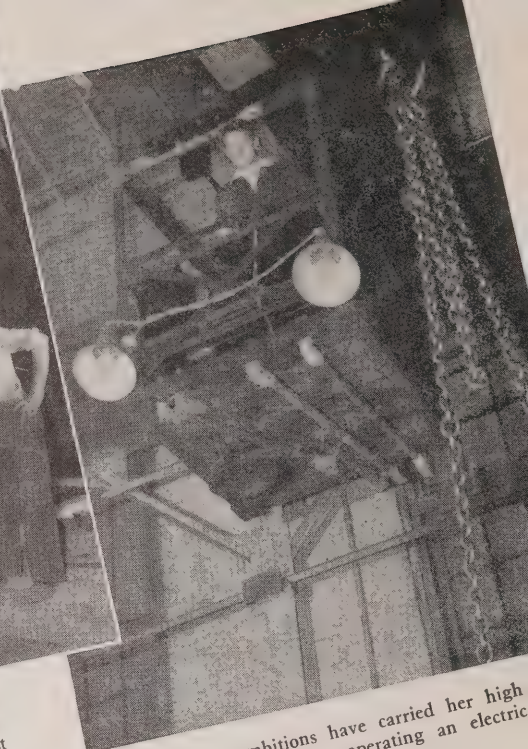
Armour plate for military equipment is fashioned in the jaws of this great electrically-driven rolling mill.



The Hamilton war worker in this illustration is shown operating an electrically-powered planer.



There is no cause for worry about zero weather when standing near this 50-ton capacity electric blast furnace.



This lady's ambitions have carried her high in the world. She is operating an electric crane in a war plant.

Since 1939, Hamilton has had an influx of 12,000 people and today, it has a population of nearly 168,000 and a waiting list of 1,000 applications for houses. To meet this emergency, the city is rushing the construction of 950 wartime dwellings which will have a two-wire service.

A real Hamilton booster, Andy Bradt likes to "go to work" on any interested visitor and reel off some of the reasons for the city's "ambitious" reputation. He will proudly tell you that Hamilton had the first long distance power line in the world; the first telephone exchange in Canada; that the first experiment with electricity for illumination purposes was made in Hamilton; that Canada's first sewing machine, coal-oil lamps and cloth-covered caskets were produced through Hamilton enterprise.

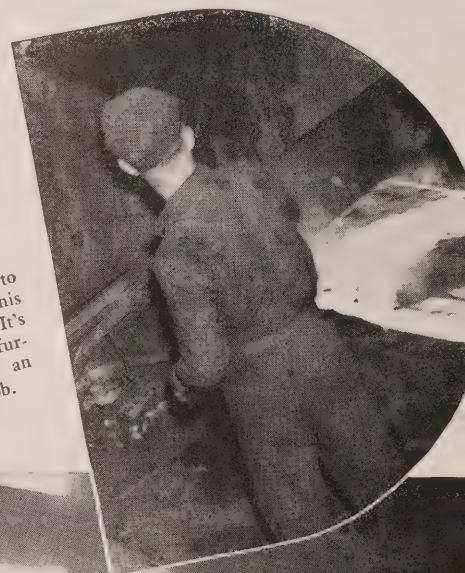
If he finds that you are impressed—and it would be difficult to be otherwise when confronted with a man with such a background—Mr. Bradt will remind you that the first Canadian-built railroad locomotives, passenger and freight cars were products of Hamilton. Even Hamilton nostrils were the first in Canada to be assailed by the sulphuric fumes of matches. Then there are such odds and ends as the first threshing machine, the organization of the first Canadian life insurance company and the discovery of acetylene gas. There was also the achievement of the late Dr. James Roberts who, as medical health officer for Hamilton, was successful in wiping out diphtheria.

Mr. Bradt will also remind you that Hamilton is noted for its brawn as well as its brains and that, it was there the idea of the British Empire Games was first conceived.

The development of Hamilton, which can now boast of being the centre of more than 500 industries, commenced with the advent of hydro-electric power, first brought to that municipality in 1898 by the development of DeCew Falls. With low-cost hydro-electric power, Hamilton was able to compete successfully with any other com-

Even if it is hot this workman must keep cool. He is engaged rolling steel which will be draped round battle-ships and other wagons of war.

It wouldn't take long to turn out hot roast on this kind of a "stove". It's only a small electric furnace, but it's doing an important war job.



munity manufacturing similar articles. As a result, many basic industries were established in Hamilton, including the manufacture of steel, textiles, farm machinery, foundries, rubber, coke, railway equipment, packing plants, electrical manufacturing and many other allied industries.

Remarkable Growth

While the first decade of the present century witnessed a remarkable growth in the city, Niagara power, brought in by the H.E.P.C., in 1913, combined with the first Great War, provided the impetus for the phenomenal expansion of the second decade. Consolidation of the industries of Hamilton during the past twenty years has placed the city in an enviable position from a manufacturing standpoint.

At the outbreak of the present war, the load supplied by the Hamilton Hydro-Electric Commission was in excess of 90,000 horsepower. Today that load is more than 160,000 horsepower as the machines and plants, which once hummed with peacetime activity, are now blending in the ever-increasing crescendo of Canadian war production to hasten the day of complete victory.

The steel plants are producing great quantities of new types of steel for guns, tanks and tools. Secondary industries also have undergone a remarkable development, and are making a vital contribution to the war production programme. Many of the vehicles now on active service are equipped with tires made in Hamilton which is also turning out vast quantities of coke, chemicals, textiles, machine tools, food and other articles too numerous to mention.

Power consumption is probably the most accurate criterion of a municipality's production output. It is, therefore,

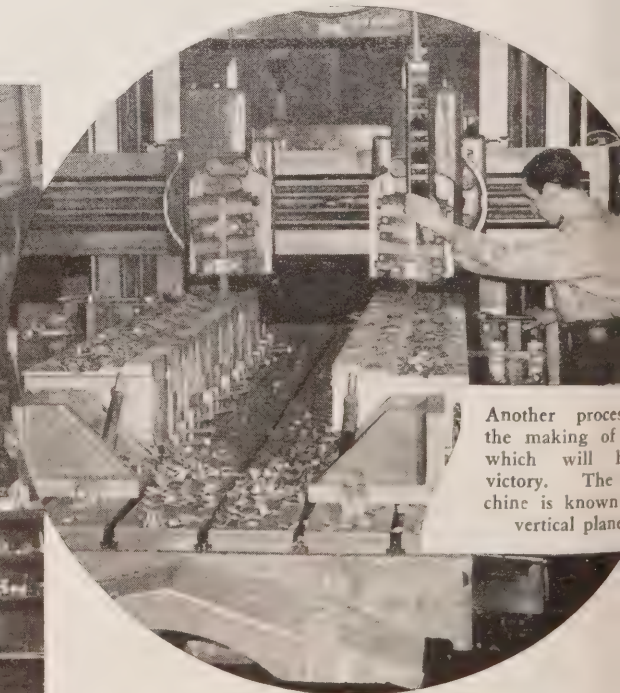
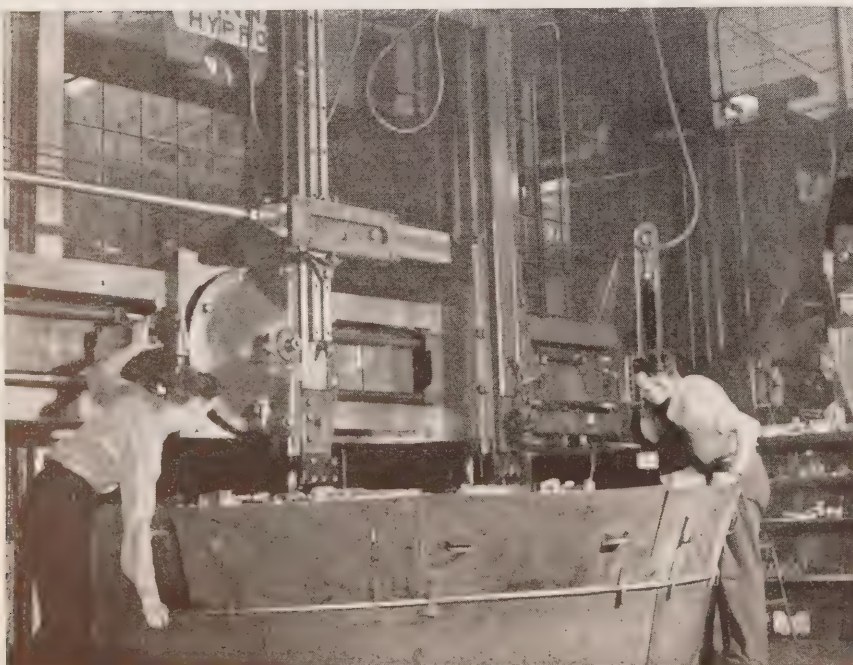
interesting to note that in 1918, the total load supplied by The Hydro-Electric Power Commission of Ontario was only a little better than 190,000 horsepower for all purposes throughout the province. By next year, 1943, Hamilton's consumption alone will come very close to this figure.

The Hamilton Hydro-Electric System does not supply all the power used within its boundaries. Under a policy adopted some years ago, The Hydro-Electric Power Commission of Ontario provides, direct, the energy consumed by electric steel furnaces which operate in a more or less intermittent fashion. When the war started, one Hamilton plant installed four electric furnaces which required approximately 10,000 horsepower. Since then, a 50-ton furnace has been added, consuming 15,000 horsepower, and a second 50-ton furnace is now being installed. Therefore, the production of steel by this company will require approximately 40,000 horsepower. In addition, another Hamilton plant is installing a 70-ton electric furnace which will be in operation early in the New Year when it will require 20,000 horsepower.

Spotted throughout the city are 14 sub-stations operated by the Hamilton Hydro-Electric Commission which has more than 180 employees on the payroll. Of that number, 60 are on the staff at head office which is located at 12 King Street East. While the interior of this quaint, rambling building was renovated, the front exterior wall still retains the artistic but now grimy architectural glory of 100 years ago when it was occupied by the British Bank of North America.

Among the many well-known officials in the service of the Hamilton Hydro in addition to Mr. Bradt, the general manager, are C. H. Hutton, chief engineer, and J. W. Hammond, chief accountant.

This illustration shows a rotary planer which is driven by electric power. The workmen are engaged in making small carriages for naval guns.



Another process in the making of which will be victory. The machine is known as a vertical planer.

ACCLAIM EFFICIENCY OF HYDRO METHODS

New Regulations and Problems are Reviewed at Western
Section Meeting of Administration and Accounting
Committee of The A.M.E.U.

HYDRO employees should be conscious at all times of their unique opportunity to render an important public service.

This observation was made by V. A. McKillop, president of the Association of Municipal Electrical Utilities when speaking at London recently upon the occasion of the Western Section meeting sponsored by the Office Administration and Accounting Committee of the A.M.E.U.

During the proceedings high tribute was paid to the efficiency of the accounting methods introduced by the municipal accounting staff of The Hydro-Electric Power Commission of Ontario. References were made also to the close co-operation which had been maintained between the H.E.P.C., and the A.M.E.U.

The meeting provided the opportunity for a thorough review and discussion of new regulations affecting administration and accounting routine. Many subjects, ranging from joint accounting and payroll deductions to billing and consumer meter reading, were included on the agenda of business.

W. E. Wallace, chairman of the Western Ontario District, presided at the luncheon and introduced Mr. McKillop who stressed the importance of Hydro service. The latter spoke of the potential value of the contribution of each Hydro employee in bringing about a better way of life for all mankind, and declared that they could very well adopt the British slogan, "Everything Depends On Me."

Proceeding, Mr. McKillop recalled an address delivered by the late Sir Adam Beck some thirty years ago and quoted the following passage:

"I am the servant of the people. My greatest joy is to make the lot of everyone within the range of my work and influence brighter and better. If I have helped to lessen

the cares of the housewife by making electricity her servant, I have my reward. If I have helped the farmer to make life more attractive to the boys and girls on the farm, then I have not laboured nor have you co-operated with me in vain. If I have helped to save the life of any afflicted, I am happy. The day of the people is come. In the winning of these great victories I am but one, but you are many. Let us set our faces toward the attainment of even greater things."

Systems of Joint Accounting

Discussion on the subject of accounting methods for commissions operating more than one utility was led by L. Gothard of Brantford and D. J. McAuley of the H.E.P.C. In most places, it was pointed out, it has been found advantageous to have joint disbursement vouchers, separate bank accounts and a joint checking account.

Stewart Preston, Kitchener, who presided at the discussion meeting, declared that the value of joint accounting depended upon the utility or office involved. Three factors, he said, should govern the decision as to the best type of system for any record-keeping. In the first place, the speaker stressed simplicity, stating that the installation of a system which tended to complicate records was not an improvement. Secondly, there was the question of facility and, thirdly, that of economy. The least expensive system, Mr. Preston warned, was not always the most economical.

Two questions arising out of a discussion of the Kitchener system were as follows:

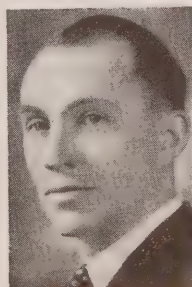
1. Has any municipality arrived at a division of joint expenses which has been approved by the H.E.P.C., and how has it been achieved? 2. How are N.S.F. cheques handled?

(Continued on next page)

AT THE A.M.E.U. MEETING



C. E. Hodgson



Vernon A. McKillop



W. E. Wallace



R. M. Bond

In the case of the first, it was stated that the local manager, district engineer and sometimes a member of the municipal accounting department, H.E.P.C., arrived at an equitable division of costs, then these were submitted to the H.E.P.C. for approval.

N.S.F. cheques, it was pointed out, were charged back to one department and usually made good by the end of the month by the department concerned.

During a session conducted under the chairmanship of R. M. Bond of the H.E.P.C., municipal accounting department, representatives of several municipalities were called upon to explain their systems of joint accounting. Mr. Bond declared that while it was the desire of the H.E.P.C. to co-operate with local management in assisting their staff to keep the joint books in order, any extraordinary amount of time given to this work should be paid for by the local utility on a pro rata basis.

C. E. Hodgson, H.E.P.C., municipal accounting staff, addressed the meeting on the subject "Some Accounting Problems of a Small Hydro Office." He directed attention to new problems which had arisen with the amendment made to the Sales Tax Act at the outbreak of war in 1939 when an 8 per cent levy was placed on all residential services. Just when the sales tax accounting began to run smoothly, the Defense Tax and then the Income Tax came along, Mr. Hodgson stated, and he urged all his listeners to thoroughly familiarize themselves with the provisions of the Income Tax Act. The tax reductions, Mr. Hodgson emphasized, were designated trust funds and had to be kept separate from other funds. That, he said, could be best accomplished by writing a cheque for the tax at the time the pay cheques were issued. In that way, there would never be any deductions on hand.

Income Tax Deductions

"Every employee who earns sufficient to be taxable as set out in the table, must pay tax", continued Mr. Hodgson. "Furthermore each employee must fill out a form, T.D. 1, setting out his status and claim for savings exemptions. This form is to be kept on file by the employer. Employees over 65 years of age will have deducted only the total tax less the savings portion, irrespective of the amount of personal savings. If the employee is paying into a pension fund, and this payment is allowed as a deduction from his salary, then the gross salary, less the deduction, will be used as a basis for the tax. In the case where any employee is paid from one or more sources, no deduction need be made unless the employee receives sufficient to be taxable as set out in the table of deductions. I understand, however, that the employee may make arrangements to have deductions made on his total salary.

"A very necessary record, and this applies only to the smaller utilities as a rule, is that you provide some means by which you may record the details of each employee's pay and the deductions for pensions and taxes", declared Mr. Hodgson. "As before, you will be asked to make detailed returns at the end of September, 1943, and you will save much time and inconvenience if you accumulate these statistics by pay periods."

The speaker reminded his audience that temporary employees only were subject to the provisions of the Unem-

(Continued on page 21)

PASSED THE AMMUNITION

THERE was quite a bit of ammunition passed when the corvette Oakville shelled, rammed and sank a German submarine in the Caribbean Sea. The other day, one of the lads, who was right in the thick of this action, walked into the H.E.P.C. head office with a broad grin on his handsome face. He is none other than George ("Joe") Shiels who had been with the Commission for 16 years. In January of this year, he left the municipal engineering department to pull on a Canadian naval uniform and become a gunner. George, who is 31 years old, got ideas about the navy as a result of having lived at the Island for 23 years. From his quiet, cheery remarks, it was not difficult to learn that the sinking of the sub was a "good show" in which the boys of the now-famous Oakville gave of their



George Shiels

best. George is hoping that it won't be long until he is passing some more ammunition which will blast more German subs from the sea.

PRAISE HAMILTON ROLE ON INSURANCE QUESTION

Recognition of the important role played by the Hamilton Hydro-Electric Commission in obtaining a favourable ruling from the Unemployment Insurance Commission found expression in a motion unanimously adopted at a recent meeting of the executive committee of the O.M.E.A.

The motion read as follows: "Resolved that the executive committee of the Ontario Municipal Electric Association wish to record their appreciation of the principal part which the Hamilton Hydro-Electric Commission played in obtaining a favourable decision from Mr. Justice Cannon in connection with Unemployment Insurance."

Under this ruling, employees of local Hydro and Public Utilities Commissions and Committees are classified as being engaged in excepted employment.

At this executive meeting, Kenneth A. Christie, K.C., the president, reported that all the district meetings had been well attended and enthusiastic. "The chairman or one of the commissioners of The Hydro-Electric Power Commission of Ontario has been present at most of these meetings, and their addresses have been a source of inspiration and information to the delegates," stated Mr. Christie. "Their presence, too, has borne testimony to the close co-operation which exists between our organization and the commission."

Commenting upon the general condition and policy of the O.M.E.A., the speaker announced that there were now 185 members, representing the strongest membership in the history of the association. At the same time, he expressed the hope that this membership would be increased to over 200 by next year.

Continuing, Mr. Christie declared, "We have now a strong publicity medium in the Hydro News; if we are to maintain, and even improve the high standard of this publication, we must give it continued and better support by constantly remitting news relating to the activities of our members and our organization. It is distinctly in our interests to do this."

13,500 YEARS OF HYDRO SERVICE IS RECORD OF 514 EMPLOYEES

Many New Members Receive Buttons and Certificates
At Annual Dinner of Quarter-Century Club

ONE hundred and thirty-five centuries of Hydro service to the people of Ontario!

Translated to more finite terms, this astonishing figure represents the combined service record of the 514 members of the Ontario Hydro Quarter-Century Club, an organization for employees who have been on the Commission's staff for 25 or more years. At its annual reunion and dinner, held recently, 102 new members were officially received into this "charmed circle" of Hydro employees, bringing the total service record of the Club's personnel to approximately 13,500 years.

The idea for an organization of this type was conceived in the mind of the late Major W. W. Pope, former Secretary of the Commission. The Quarter-Century Club was created seven years ago in recognition of the faithful service of those employees who have contributed throughout the years to the progress and development of Hydro in Ontario. As a token of its appreciation, the Commission provides special concessions for such employees in the form of increased vacation periods beyond the regular two weeks normally granted. Upon attaining 25 years' service, an employee is allowed one month's vacation for that particular year, three weeks' vacation annually thereafter until the thirtieth year, and one month's vacation annually at and beyond the thirtieth year.

The affairs of the club are administered by an executive committee of 23 members. The president, vice-president, secretary, and treasurer are elected by ballot, and they in turn appoint a committee of 19 office and field representatives. Members of the Quarter-Century Club foregather once a year, at which time a reception is held for those employees who have qualified for membership during that year. Upon being received into the club each member is presented with a handsomely inscribed certificate and a 14-karat gold service button, which are reproduced in these pages.

The exalted title of Member Number One goes to Albert H. McBride, head of the cost accounting section of the municipal engineering department. An employee of the Commission since 1906, the year of its inception, Mr. McBride has compiled the notable record of 36 years of continuous service and is still active. Two other members of the Club have 35 years' service to their credit: F. T. Stocking, municipal engineering department, Toronto, still an employee; and C. C. Bodley, formerly of the testing and inspection department, Toronto, now retired. No less than 67 members of the club, the majority of them still full-time employees, have reached or passed the 30-year mark. Of the total of 514 names on the club's register, 24 are ladies.

This year's annual reunion was held at the King Edward Hotel, Toronto, on October 23, with more than 250 persons in attendance. The committee in charge of arrangements provided the gathering with one of the most successful and enjoyable evenings in the club's history. Under the genial chairmanship of C. G. ("Charlie") McEvoy, Quarter-Century Club president, the programme was carried off in smooth, well-planned sequence. In his address of welcome, Mr. McEvoy thanked club members and officers for their wholehearted co-operation during the past year. He stated that during the coming year the club's membership will be increased by 101 more employees, nine of whom are ladies.

Past President E. G. Archer led the assembly in a silent tribute to the following eight members of the club who have passed away during the past year:

H. A. Campbell, purchasing department, Cobourg; R. W. Funnell, operating department, Stratford; A. M. MacLachlan, employees' relations Dept., Toronto; G. A. McNaught, operating department, Shelburne; G. B. Pinco, operating department, Niagara Falls; W. C. Chappell, operating department, Niagara Falls; H. W. Wood, operating department, Niagara Falls; and James Andrew, operating department, London.

In the absence of Dr. Thomas H. Hogg, chairman and chief engineer of the Commission, a Quarter-Century Club member who completes 30 years of service during 1943, Mr. McBride officiated at the presentation of certificates and service buttons to new members. Sixty-five of the 102 employees qualified for admission to the club this year were present at the reunion to receive their tokens in person.

In an address which sparkled with humour, Mr. McBride literally "stole the show," as he regaled his audience with whimsical recollections of Hydro's early days and interjected a number of delightful personal touches.

George T. Brown of Dundas conducted the lucky draw, assisted by Miss Edith Anderson of head office, Toronto. Valuable prizes, donated by representative concerns in the electrical field, were enthusiastically received by the twenty winners.

On behalf of the field members of the club, a motion was presented by Mr. Brown, seconded by William Gerrie of Belleville, expressing to the chairman and commissioners, and to past and present executive officers of the Quarter-Century Club, a message of appreciation for their wholehearted co-operation.

The results of the balloting to elect the executive committee for the coming year were announced by W. C. Cale of Toronto, and once again the administration of the club's affairs passes into very capable hands. The new officers are:

Pictures on page 10, 11 and 12

(Continued on page 19)



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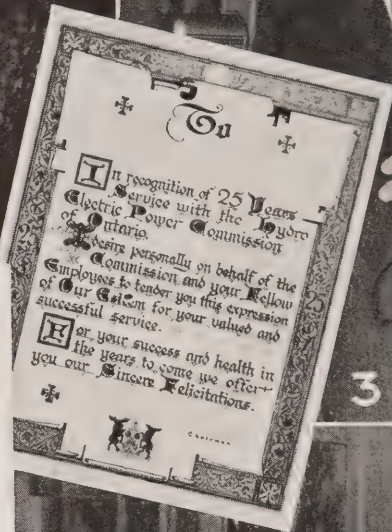
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Quarter Century Club

ILLUSTRATED above are camera highlights of the 1942 annual dinner of the Quarter Century Club. 1. President Charlie McEvoy presents a lucky draw prize to Miss Jean McNaughton, while Miss Edith Anderson looks on. 2. Certificate which is presented to each club member. 3. George T. Brown, the new president. 4. Miss E. G. McNichol, Miss Mabel Evans and Miss Belle Martin who qualified as members this year.

5. The gold button which is worn by each member of the club. 6. George Ayres, Bruce Platt, H. E. Hadley and J. W. E. Anderson who have just completed twenty-five years in the service of Hydro. 7. Some of the members may "discover" themselves in this group.





Quarter Century Club

MORE camera impressions of the dinner are featured on this page. 8. Included in this group are C. H. Yelland, W. A. Salisbury, Frank Hinch, George Terry, William Gerrie and J. S. Lotimer. 9. D. G. Ferguson, Fred Hodges, Phil Wayman, Harry McCall and W. C. Cale. 10. Considerable applause was heard from this section during the entertainment. 11. R. T. Jeffery, chief municipal engineer, and Wills MacLachlan, head of the employees relations department, had some serious business to discuss following the dessert. 12. This group followed the addresses with interest. 13. Art Lang, Fred A. Robertson, T. C. James and F. H. Chandler are in this line. 14. W. G. Urch, George T. Brown, S. L. Eisenhofer and Charlie McEvoy enjoy whimsical remarks made by A. H. McBride (at microphone).





Quarter Century Club

THE roving cameraman also "shot" the following groups: 15. F. W. Clark, Miss S. E. Hartwick, Miss E. K. Toole, C. C. Clarke, Miss Jean McNaughton, Miss Tessa MacPherson, H. S. Cuthbert and Miss Edith Anderson. 16. A. L. Malcolm receives button and certificate from A. H. McBride. 17. The flash apparently dazzled this group. 18. Harry Leeming appears to be leading with his right, while B. O. Salter, W. P. Dobson, and John Dibblee are apparently on the defensive. 19. A. H. McBride hands out awards to two new members. 20. D. M. Johnston, a well-known personality at these dinners. 21. W. E. Russell, H. D. Rothwell and George Mickler are amused and interested. 22. Otto Holden, H. R. Silcox, H. Wykes and E. Awde were a happy group.



READY TO FIGHT

FIRE

and BOMBS



IT all happened about 11 o'clock one morning in the Commission's head office building in Toronto.

Flanked by three fire-fighters—two wearing helmets, rubber coats and boots, and the other encased in a grim ghostly asbestos suit—a completely equipped fire truck clanged through the basement and into the waiting elevator which swept up to the 16th floor without stopping. Following in another elevator came a corps of auxiliary helpers from the maintenance staff.

Grabbing fire extinguishers, shovels and other equipment the firemen headed for the stairs leading to the 17th floor and on to the roof. Here, one jumped on to an observation parapet to scan the murky Toronto sky through a pair of powerful binoculars, while the other two tackled a burning "incendiary bomb" with sand and fire extinguishers.

Meanwhile, 64 Hydro wardens—four on each floor—had shepherded the staff into "safe areas."

Daytime Air Raid Alarm

This realistic demonstration of the Commission's A.R.P. and fire-fighting organization was given upon the occasion of Toronto's daytime air raid alarm test. It was

conducted under the able direction of Fred A. Robertson, administration building manager. The latter, an accredited member of the Toronto Civilian Defence Committee and official air raid warden for the block in which the Commission's building is located, has organized Hydro's head office A.R.P. and fire fighting service, which is regarded as one of the finest in Canada and the United States.

During this test workout, the Hydro fire truck was inspected by Dr. Thomas H. Hogg, chairman and chief engineer; Hon. W. L. Houck, M.L.A., vice-chairman; commissioner J. Albert Smith, and other Hydro officials. Replete with automobile type headlight and business-like gong, this truck stands 4½ feet high, and is 5 feet 2 inches long, and 2 feet 5 inches wide. In it are to be found all essential tools and fire-fighting apparatus.

In front, and along the sides, are five fire extinguishers, a fire pump, two shovels, axe, firemen's hook or pike pole, four pails of sand with scoops and two oil lamps. Stored under the panels on the sides of the truck are to be found small tools, including hammers, screw drivers, pliers, wrench, four flash lights, rope, wire-cutters, first aid kit and instructions and asbestos gloves and suit. Below the top panels are the firemen's helmets and clothes.

(Continued on page 16)



Fred Robertson, administration building manager, points to the indicator which is located in the basement. It records the floor on which an electric fire alarm button is pressed.

Sprays which spurt from the nozzles of fire extinguishers spell death to fire. Hydro's trained fire-fighters, who are thoroughly familiar with their equipment, made short work of this "outbreak".



The ghostly figure at the left is Bill Lofgren in his going-to-fire asbestos attire. His colleagues, Jack Brown and Dave Smith, ready for action, swing the gong-lancing fire truck off the elevator.



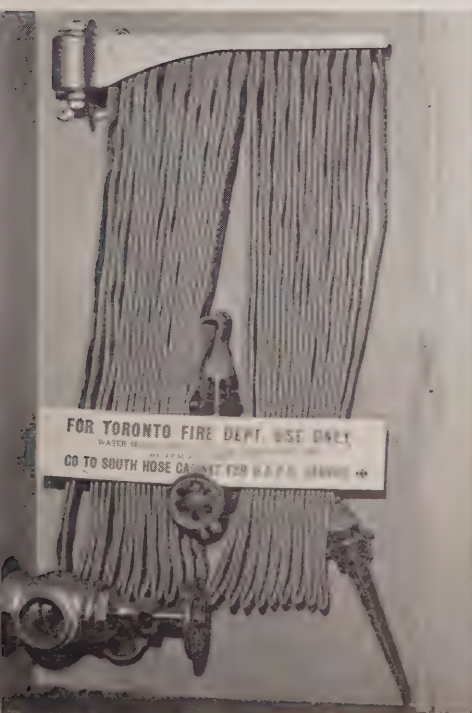
An auxiliary corps of maintenance men follows the fire-fighters. In the group are James Philcox, Jack Swift, Percy Leland, Jack Cozens, Frank Tunsted and Jack Thompson, building superintendent.



Upper—Grabbing fire extinguishers and essential tools, Hydro's firemen approach the scene of an "outbreak". Right—Examining the equipment on the truck (right) are Dr. Thomas H. Hogg, chairman and chief engineer, and Jack Thompson, while Hon. W. L. Houck, vice-chairman (left), tries on the asbestos gloves. Commissioner J. Albert Smith inspects a pike pole.



An alarm is recorded and the siren wails. Hydro's fire-fighters and the truck speed into action. On the truck, shown at the right, are to be found all tools and equipment necessary for combating fire. It is equipped with fire extinguishers, shovels, axe, pike pole, pails of sand, oil lamps, hammers, screw drivers, wire cutters, pliers, wrench, rope, flashlights, first aid kit and other articles.



On each floor on the H.E.P.C. administration building is a high-pressure hose for the use of the Toronto Fire Department. This illustration shows a hose in position in a recessed wall cabinet.



There is a second hose on each floor for the use of Hydro firemen. The electric alarm can be seen in the lower left corner, encased in glass. A tap with the hammer, located at the side of the case, will break the glass.



While fireman Dave Smith unrolls the hose, his colleague, Jack Brown, advances towards the "fire" with the nozzle "at the ready". There are 75 feet of hose on the large floors and 50 feet on the smaller floors.

READY TO FIGHT

(Continued from page 13)

On each of the floors, from the basement to the 16th, the Commission's administration building is equipped with fire alarms and fire-fighting apparatus, including fire extinguishers and two sets of hose—one for the use of the Hydro firemen and the other for the Toronto Fire Department. These lengths of hose are set in wall panels and are inspected at regular intervals. In the same panel with the Hydro hose on each floor is the electric alarm button encased in glass which can be broken by using a conveniently placed hammer.

Inscribed on this button is the tantalizing word "start". In case of fire or bomb hit, this cent-sized disc will immediately shut off all ventilating fans and automatically start the high pressure pump. At the same time, it will cause the building siren to wail, record on the basement indicator the floor from which the alarm was sent, sound an alarm at the Toronto Fire Department headquarters and send Hydro firefighters into action.

If Toronto firemen were summoned to the building, they would proceed to the basement where a waiting elevator would rush them to the floor where the outbreak had occurred. There they would find the Hydro firemen and the truck with all necessary equipment and lines of hose in readiness for immediate use.

The 64 Hydro building wardens have definite instructions as to their duties in case of air raids or fire and, under their direction, all employees can be quickly moved to the designated "safe areas".

Both the fire protection service and the system of building management in operation at the H.E.P.C., building have aroused keen interest among building owners and managers in both the United States and Canada.

Mr. Robertson, the H.E.P.C., administration building manager, is vice-president of the Ontario Building Owners and Managers Association which is a member organization of the National Building Owners and Managers Association. Through this organization he has received many enquiries concerning the H.E.P.C., building set-up which has been acclaimed as one of the most efficient on the whole American continent.

RECEIVE C.E.A. AWARDS

Three members of the 2nd Division Royal Canadian Engineers have received Canadian Electrical Association awards for having saved the life of a comrade at Camp Niagara during the past summer.



Wills MacLachlan, chairman of the Accident Prevention Committee of the C.E.A., and head of the Employees' Relations department of The Hydro-Electric Power Commission of Ontario, is shown (left) making the presentation at a full regimental parade at the York Armouries, Toronto. The trio are, from left to right, Capt. H. B. Tett,

who received the C.E.A. medal; Sergt. W. J. Murray and Corporal Robert Andrews who were recipients of certificates of assistance. Tett and Murray are Commission employees, while Andrews is identified with the Consumers Gas Company. The citation showed that the three performed resuscitation on Sapper R. F. White who was rendered unconscious when struck by lightning. Although White had ceased breathing, Tett and his assistants were successful in bringing the man back to life after applying resuscitation for 45 minutes.

H.E.P.C. ORGANIZATION PRAISED BY FIRE CHIEF

From George Sinclair, Toronto's well-known Fire Chief, comes the highest praise of the A.R.P., and fire protection system which has been established in the H.E.P.C. head office building.



Fire Chief Sinclair

"Hydro will be putting us out of business," laughed the Chief when commenting on the completeness and efficiency of the Commission's fire-fighting equipment. "But, in all seriousness," he continued, "business and industrial organizations which, like the Commission, have auxiliary fire-fighting facilities of their own are rendering an important service to their communities. Undoubtedly, the Commission has one of the most efficient among the many well-organized systems which have been set up in big office buildings to combat possible outbreaks of fire."

A.M.E.U. CANDIDATES ARE NAMED

Results of the primary ballot for 1943 officers of the Association of Municipal Electrical Utilities are set forth in the scrutineers' report.

President: R. B. Chandler*, V. A. McKillop*, R. H. Martindale, R. J. Smith, R. S. Reynolds and J. C. Keith.

Vice-President: A. W. Bradt*, O. C. Thal, R. S. King*, R. S. Reynolds, H. R. Hatcher, R. J. Smith, R. B. Chandler, A. B. Manson, C. C. Folger, J. R. McLinden, J. E. Teckoe, E. L. Gothard, Stewart Watt, S. W. Canniff, C. L. McMann and W. R. Catton.

Secretary: S. R. A. Clement* and F. A. Archer.

Treasurer: G. E. Conn*, F. A. Archer*, H. T. McDonald, C. E. Hodgson, E. B. Easson, R. M. Bond and D. G. Ferguson.

Directors: (Three to be elected from membership at large): O. C. Thal*, A. B. Manson*, A. W. Bradt, R. S. Reynolds*, G. E. Chase*, S. A. Canniff*, H. R. Hatcher*, R. L. Dobbin, R. H. Martindale, J. C. Keith and O. H. Scott.

District Directors:

Niagara District: R. S. Reynolds, A. B. Manson, Stewart Watt*, R. Harrison*, J. E. Teckoe*, Jr., J. R. Sullivan and O. C. Thal.

Central District: C. A. Walters*, G. E. Chase, W. E. Reesor*, O. H. Scott, G. F. Shrieve and C. C. Folger.

Eastern District: R. J. Smith*, M. W. Rogers*, W. P. J. Derham and S. W. Canniff.

Georgian Bay District: R. S. King, W. M. Salter*, L. G. McNeice* and J. C. McNab*.

Northern District: A. W. H. Taber*, C. J. Moors* and R. H. Martindale.

*Name will appear on election ballot if there is no withdrawal.

Municipalities and Consumers Lauded For Conservation Effort

Hon. W. L. Houck and J. Albert Smith Hail Results as "Highly Gratifying"—
Address District No. 4 O.M.E.A. Meeting

VOLUNTARY co-operation on the part of domestic consumers and municipal Hydro systems in conserving electricity has already greatly "eased" Hydro's power shortage problem.

This fact was made known at the meeting of District No. 4 of the O.M.E.A., held at Toronto, when Hon. William L. Houck, vice-chairman, and commissioner J. Albert Smith of the H.E.P.C., expressed warm appreciation of the spirit in which the municipal Hydro systems and the public generally are supporting the power conservation programme. They described the response to these measures as "highly gratifying" and bespoke the continuance of "this wholehearted and magnificent effort" during the remaining fall and winter months.

Both speakers referred to the fundamental necessity of allocating Ontario's power resources in a manner consistent with the most vigorous prosecution of the war effort.

"Our first and foremost responsibility, of course, has been to provide our war industries with all the electric power they require, irrespective of the size of their load demands," declared commissioner Smith, "and to this end we have been devoting our utmost energies."

Uncertainty in Wartime Planning

Continuing, Mr. Smith stated that since the last war Ontario had become so highly electrified, and electric power had found its way into so many phases of our daily lives, that to curtail it drastically would create serious consequences. It became necessary, therefore, to make available sufficient power for essential domestic uses after the demands of war industries had been completely met.

Referring to the element of uncertainty in wartime planning, Mr. Smith said: "To begin with, we have war loads piling up at irregular intervals and these must be taken care of as well as the normal trend. We obtain the most reliable information we can regarding the future establishment of new war plants and try to plan ahead accordingly. But the government, naturally, cannot always tell us several months in advance of each new development. New war plants often come into operation ahead of the date scheduled and at other times they may be several weeks late, with the result that our planning runs into many complications."

Mr. Houck and Mr. Smith dealt with the publicity campaign being conducted by the Commission through the media of newspapers, radio, billboards, motion picture films, posters and various advertising channels, on behalf of power conservation. The shortage of power in Southern Ontario having been estimated at 250,000 to 300,000 horsepower during this fall and winter, it is estimated that the Dominion Power Controller's order, as it now stands, will

account for 100,000 horsepower or approximately one-third of the total amount. The resulting 150,000 to 200,000 horsepower, it is hoped, will be made up through voluntary conservation. In its campaign, the Commission is stressing how substantial savings can be made in home, office and factory by the careful and studied use of appliances.

New Avenues of Progress

An enthusiastic address of welcome was extended to the O.M.E.A. delegates by His Worship Mayor Fred J. Conboy of Toronto. Dr. Conboy emphasized the importance of Hydro's responsibility to the province in time of war as in time of peace, and he pledged the support of the city of Toronto in aiding the Commission in its war programme. His Worship declared that the benefits made available by Hydro have raised our living standards to a degree equalled by few countries of the world, and he predicted that in the post-war period this great enterprise would exert a profound influence on our efforts towards readjustment.

Albert Jennings, chairman of District No. 4, who presided, spoke of the fine spirit of co-operation existing between the Commission and the O.M.E.A., and the "cordial reception" which was extended to all delegations to the Commission. "We have never had any difficulty in getting in to see the commissioners at any time," declared the speaker.

Kenneth A. Christie, K.C., president of the O.M.E.A., who was introduced by the District No. 4 chairman, reviewed the work of the association in various fields.

Mr. Christie reported that the membership of the association is at the highest point in its history and that its activities are receiving the finest co-operation. He referred to two committees recently established by the O.M.E.A. to assist in wartime power problems and in the solution of problems arising at the conclusion of the war. These are the Committee on Power Conservation and the Post-War Reconstruction Committee.

The O.M.E.A. president complimented the members of the Hydro-Electric Power Commission for their attendance at and interest in O.M.E.A. meetings during the past year. "Our aim," continued Mr. Christie, "is to supply power at cost, co-operatively, to raise the standards of life of the people."

Commission's Co-operation Lauded

R. T. Jeffery, chief municipal engineer of the Commission, discussed certain engineering and economic problems involved in supplying electric power during wartime. He declared that conservation has brought about a decrease in revenue, with much of the revenue now coming from basic industries. Mr. Jeffery expressed the personal opinion

(Continued on page 23)

Around the Hydro Circuit

A MAN whose untiring service and research during the past quarter century has linked the name of Canada with many important advancements in the field of applied science and engineering is a recipient of the University of Toronto Engineering Alumni Medal for Technical Achievement.

He is William Percy Dobson, head of the testing and research laboratories of The Hydro-Electric Power Commission of Ontario.



Mr. Dobson and his medal, both sides of which are shown.

Presentation of the medal was made by W. E. Wingfield, president of the Engineering Alumni Association at the eleventh triennial dinner of the Association in the Royal York Hotel, the candidate having been introduced by Professor C. G. Williams of the Department of Mining and Engineering at the University of Toronto. Another distinguished Canadian who was so honoured on this occasion by the Alumni is Lieutenant-Colonel W. E. Phillips, D.S.O., M.C., president of Research Enterprises Limited.

Mr. Dobson, whose outstanding record of achievement has commanded widespread attention in scientific circles, is a graduate of the University of Toronto from which he received the degree of B.A.Sc., in 1911. Awarded a research fellowship of the Engineering Alumni, he returned to the University of Toronto and, at the 1914 convocation, received his Master's degree. In July of that year, he joined the staff of The Hydro-Electric Power Commission of Ontario as assistant engineer, and rapidly advanced to his present position.

Original research on transient phenomena on transmission systems, conducted by Mr. Dobson under his fellowship course, unfolded much data of practical value to designers and manufacturers of electrical apparatus. Between 1920 and 1922, he carried on theoretical and experimental

studies on the accurate measurement of high voltage by means of the corona volt-meter and on the grounding of transmission systems. He was also one of the pioneer investigators of short-circuit currents on transmission systems and rendered valuable service in the designing of reactors for the Queenston generating station.

Embracing an extensive range of technical and non-technical investigation, his work as head of the Commission's research department has been of major importance in the solution of many theoretical and practical problems.

In addition, Mr. Dobson's scientific knowledge has found Dominion-wide application through his service as chairman of the Canadian Code Committee of the Canadian Engineering Standards Association. He has held this important office since 1927 and has been largely responsible for the adoption of this code by every province in Canada. He has also been a member of the American Institute of Electrical Engineers since 1913, and for many years has been on the Institute's Standards Committee which is responsible for the issuing of all electrical standards on this continent. In 1939 he was president of the Ontario Association of Professional Engineers, and was recently elected president of the Dominion Council of Professional Engineers.

"The Father of Hydro in East York" is the respectful tribute frequently applied to **Albert G. Jennings**. Chairman of the East York Hydro-Electric Commission and of District No. 4, O.M.E.A., Mr. Jennings was born in London, England, in 1876.



Albert G. Jennings

Since coming to what is now known as East York, he has played a spirited role in public affairs. He has served as president of the Ratepayers' Association and has been active in school board matters. At the present time he is vice-chairman of the local A.R.P. organization.

Back in 1911 Mr. Jennings headed a committee interested in bringing Hydro to the Yorks. The efforts of the group were ultimately successful and East York received its first electrical service in 1913. The township took over management of its own Hydro affairs in 1925, and the following year a local Hydro Commission was set up. Mr. Jennings was named as its chairman, and has occupied the position continuously ever since.



W. V. Brown

A well known figure in O.M.E.A. circles, **William V. Brown**, prominent electrical contractor of Meaford, has been a district director of the association since 1939.

Mr. Brown has rendered faithful service to the Meaford Public Utilities Commission for the past ten years, and was recently elected second vice-president of the Georgian Bay Municipal Association. He is also a member of the O.M.E.A. Conservation of Power Committee.

PREFERENCE RATINGS

By M. J. McHENRY

CHIEF PRIORITIES OFFICER, H.E.P.C.

CERTAIN amendments were made to Operating Order P-46 issued by the War Production Board at Washington, effective October 10, 1942. Copies of these amendments were mailed from Ottawa to all municipal systems holding a certificate of operation under the P-46 Order.



M. J. McHenry

However, enquiries from various municipal systems in the last few weeks have indicated that the significance of these amendments in respect to the preference ratings assigned under Order P-46 has not been fully appreciated.

Order P-46, as issued to Canadian Electrical Utilities in June and July of this year, assigned a preference rating of "A-5" to be used to procure materials and equipment having U.S. content for maintenance, repairs and operation as set forth in the Order. The amendment as of October 10 raises this rating to "AA-5". The previous rating of "A-5" had become too low in value to procure a great deal of the material required, but the new rating of "AA-5" will procure all the material necessary for the purposes permitted in the Order.

At the same time, the amendment of October 10 raises the rating of "A-1-c" previously assigned for emergency repairs to a rating of "AA-2x". This latter rating, of course, is only to be used for emergency repairs or in anticipation of an emergency repair situation.

It is now in order for all municipal systems to use these higher ratings of "AA-5" and "AA-2x" where such municipal systems hold a certificate of the "CAU" series under the P-46 Operating Order.

Recently, we were requested by two or three municipal Hydro systems for advice as to how they could obtain preference rating in order to purchase necessary operating supplies. In one or two of these cases, it was found that the Hydro system making the enquiry had received a "CAU" series certificate from Ottawa, but had apparently not made use of the ratings assigned by it. We would, therefore, suggest that all municipal systems see that they have such a certificate and make use of it. If they have not applied for a certificate under P-46 Operating Order, they should do so by writing to the Priorities Division, Department of Munitions and Supply, Building No. 3, Ottawa, Ontario.

QUARTER CENTURY CLUB

(Continued from page 9)

President, George T. Brown, Dundas; vice-president, G. F. Ronald, Toronto head office; secretary, S. L. Eisenhofer, Toronto head office; treasurer, W. G. Urch, Toronto head office.

Dr. Thomas H. Hogg is honorary president, and Hon. W. L. Houck and J. Albert Smith are honorary vice-presidents.

On behalf of his fellow officers, the new president pledged the utmost co-operation in carrying on the club's activities during 1943.

A programme of sparkling entertainment and motion pictures brought the evening to a successful conclusion.

Past Presidents of Quarter-Century Club are:

1935, Major W. W. Pope (deceased); 1936, W. P. Dobson; 1937, A. C. Goodwin; 1938, A. C. Goodwin; 1939, T. C. James; 1940; J. S. Lotimer; 1941, E. G. Archer.

Following is a list of employees who were received into the Quarter-Century Club this year:

A

Acheson, G. E., Toronto; Adsett, F. C., Toronto; Anderson, A. J., Sidney; Anderson, J. E. W., Sudbury; Ayres, G. J., Toronto.

B

Baker, H. S., Niagara Falls; Ballinger, J. G., Toronto; Baxter, Allan, Niagara Falls; Beaton, Robert, Toronto; Beatty, B. H., Campbellford; Bell, W. K., Woodstock; Bessey, C. J., Ontario Power; Bogardus, Miss Ida M., Niagara Falls; Burnett, Thomas, Ontario Power; Burrows, A. G., Ontario Power; Booth, W. H., Toronto.

C

Cale, W. C., Toronto; Campbell, H. A., Cobourg (deceased); Climenhage, Colin, Ontario Power; Cooper, F. E., Ontario Power; Cullen, John, Ontario Power; Cullimore, Gilbert, Ontario Power;

D

Dafoe, Albert, Belleville; Dalton, F. K., Toronto; Davies, H. C., Toronto; Devon, C. E., Frankford; Dibblee, John, Toronto; Dickinson, Charles, Toronto; Dills, A. R., Ontario Power.

E

Edwards, Herbert, Ontario Power; Edwards, L. G., Alexander; Egles, R. W., Hamilton; Elia, G. S., Ontario Power; Evans, Miss Mabel I., Toronto.

F

Flynn, H. J., Toronto; Fowler, Alan, Toronto

G

Gerrie, W. H., Belleville; Glynn, J. P., Ontario Power; Goddard, D. J., Port Hope; Guinther, Frederick, Niagara Falls.

H

Hadley, H. E., Sidney; Hall, W. A., Toronto; Higgins, J. H., Niagara Falls; Hill, H. R., Toronto; Hinch, E. F., Toronto; Hiscock, Alfred, Woodstock; Hunter, A. N., Toronto; Huston, S. M., Toronto.

J

James, G. H., Niagara Falls; Johnson, Emil, Ontario Power; Johnson, J. F., Ontario Power; Johnston, R. N., Guelph; Jones, A. C., Niagara Falls.

K

King, F. B., Brant; King, H. M., Niagara Falls; Kreamer, R. E., Welland.

L

LaBerge, A. L., Ontario Power; Lear, F. S., Toronto.

M

Mabon, L. W., Niagara Falls; Malcolm, A. L., Toronto; Marsh, L. J., Toronto; Martin, Miss Belle, Toronto; Mason, E. J., Toronto; Metcalf, J. H., St. Thomas; Moffatt, J. W., Toronto; Montgomery, C. B., Cameron Falls; Montgomery, W. J., Niagara Falls; Morrison, R. M., Kitchener; Mutnek, Lui, Ontario Power; MacDonald, C. D., Kitchener; MacGregor, W. C., Ontario Power; McCall, G. H., Toronto; McNichol, Miss Ella G., Toronto.

N

Nugent, D. G., Oshawa.

O

Ockley, William, Walkerton; O'Donnell, W. J., Geo. Bay System.

P

Paton, J. T., Hamilton; Pew, F. V., Ontario Power; Pew, G. A., Niagara Falls; Pinco, G. B., Niagara Falls, (deceased); Platt, B. C., Toronto.

R

Rapelje, J. M., Ontario Power; Remion, L. N., Ontario Power.

S

Schnarr, Wilfrid, Toronto; Scott, A. R., Belleville; Seymour, W. N. F., Toronto; Shrimpton, A. F., Toronto; Sims, A. H., Toronto; Sloan, J. H., Toronto; Stephenson, J. E., Ontario Power.

T

Thompson, W. E., Essex; Tinney, E. G., Ranney Falls; Toohey, C. F., Woodstock; Traill, J. J., Toronto.

W

Waggoner, S. R., Ottawa; Weir, P. G., Toronto; Wesley, V. E. T., St. Catharines; Whistler, Benjamin, Niagara Falls; Wills, W. L., Ontario Power; Wilson, J. M., Ontario Power; Wood, H. W., Ontario Power; Woodall, H. R. D., Erindale; Wykes, Herbert, Toronto.

Z

Zumstine, J. L., Ontario Power.



Millions of stitches have been interwoven in the making of some 3,500 useful articles by the Ladies' Auxiliary of the Ontario Hydro-Electric Club since its inception in 1939. The illustrations shown above direct attention to the important work these ladies and their friends are doing to aid Canada's war effort. These articles are appropriately distributed among comfort boxes for members of the staff now in the armed forces, the Red Cross Society; the Salvation Army; British Mine Sweepers Auxiliary, and the Gyde Orphanage in England. The following are members of the executive committee of the Ladies' Auxiliary for the ensuing year: Miss Jane McDowall, general convener; Miss Grace Bartlett, wool convener; Miss Alberta McAllister, sewing convener; Miss Celia Storey, secretary-treasurer; Miss Helen Clements, assistant editor, Club News; Miss Margaret Jeffrey, comfort boxes; and 15 representatives, one from each floor.

REPORTS SURPLUS OF \$5,000

After three years of operation, the Employees' Mutual Aid Group of the Windsor Utilities Commission, comprising Hydro and other public services, has attained a commendable standing. The third annual report of the organization reveals that since its inception a total of 205 claims, totalling \$2,773.96, has been paid out to cover expenses for medical care, surgical treatment, hospitalization and special services.

The surplus funds of the group total \$5,302.21, with \$4,500.00 of this amount being invested in Dominion of Canada War Bonds.

THE DATE IS NOVEMBER 27

"The biggest get-together yet!"

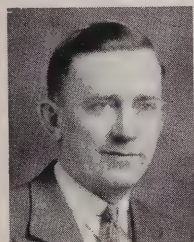
In these words, a member of the arrangements committee forecasts this year's annual at-home of the Ontario Hydro-Electric Club. The date is November 27, and the place, the Boulevard Club, Lake Shore Road, Toronto.

All club members and their friends are urged to join in the programme of dancing, bowling and card-playing. Surplus proceeds will be turned over to the War Service Committee.

A. H. Frampton Discusses Power Planning Problems

Says Accelerating War Demands Have Created Extensive Changes—Address A.I.E.E. Meeting

NEW problems created by accelerated wartime demands for electric power have compelled extensive changes in established methods of power planning, with normal growth formerly occurring over many years now virtually compressed into one or two years.



A. H. Frampton

This observation was made by A. H. Frampton, assistant electrical engineer, H.E.P.C., recently when discussing the complexities of system planning in the electrical utility industry in an illustrated address before the Toronto Section, American Institute of Electrical Engineers on the subject, "Peacetime System Planning As Influenced by War Conditions."

"Such planning, in general, may be described as an art as distinct from a science," he stated, "as it cannot be based on well-defined scientific laws. Rather the good judgment displayed in the weighing of innumerable factors influencing development at any time, and thus directing the expansion of the system along well-conceived and flexible lines, becomes the hall-mark of an efficient planning group."

Mr. Frampton pointed out that the record of total system demand in normal times was, as a rule, relatively simple to maintain where such a record was intended only to disclose the approaching need for additional generating facilities. "Even in such times, however," he continued, "it is usually desirable to maintain a corrected form of record, in which such normal variations as those that occur seasonally are eliminated." The speaker felt that under existing conditions, with enforced and voluntary restrictions in customer use of electric power introducing further complications, maintenance of a corrected record would provide data that would be valuable when normal conditions again prevail. He added that while the continuance of daylight saving time throughout the winter had substantially reduced system peak demands in Ontario, it had produced a much less marked effect on energy consumption.

Willis Maclachlan, head of the Employees' Relations Department of The Hydro-Electric Power Commission, has been elected president of the Engineering Section of the National Safety Council. In his new post Mr. Maclachlan assumes executive direction of the accident prevention programme of the many member companies throughout the United States and Canada.

Prominent in engineering circles, Mr. Maclachlan is a former president of the Royal Canadian Institute and, at present, is secretary-treasurer and engineer of the Electrical Employers' Association. He is also active in Red Cross Society work, being a member of the national executive committee in charge of purchasing.

ACCLAIM EFFICIENCY (Continued from page 8)

ployment Insurance Act. Where payment had been made on a permanent employee a refund of the employee's and the commission's shares could be obtained by applying to the district Unemployment Insurance office.

Mr. Hodgson also discussed the cost-of-living bonus and stated that complete information on this subject could be obtained from the Department of Labour, Parliament Buildings, Toronto.

"Consumer Introduction Cards" formed the subject of a discussion launched by Jack Cook of Windsor, who declared that a system of a "credit clearing advice" had been tried. It had been found, however, that there was nothing to be gained by such a system unless the procedure in respect to guarantee deposits was uniform.

Meter Reading Systems

Ensuing discussion focused attention upon possible wider application of the plan under which consumers in Rural Power Districts read their own meters, while the system which has been in operation in Guelph for over 20 years was fully outlined. In that city, before a consumer pays his bill, he records the dial markings of his electric and gas meters on the reverse side of the cashier's stub, and these readings are used for the next billing period. The billing for electric, gas and water departments is prepared monthly, one girl in the office recording electric and gas readings from the stubs. Water accounts are rendered on a flat rate basis. In cases where a consumer neglects to read his electric or gas meter, an estimated account is prepared, and if the consumer fails to send in a reading for a second month, a pick-up is made. Meter readings are obtained from 88 per cent. of the consumers, and only one meter man is employed to look after pick-ups, final bills and read 2,341 demand meters.

In Guelph, it was pointed out, the city is divided into 28 sections and one discount day is set for each section. A check-up of meters is made every 18 months. Under present conditions, however, this period has been extended to 2 years. Consumers generally, it was reported, are well satisfied with this system.

Some interesting facts were also presented in connection with the system in operation in Rural Power Districts. Consumers in these districts, it was explained, received stamped-addressed cards about five days before the meter reading period. When a consumer has recorded the position of the reading of the meter dial on the card diagram, he mails the card back to his Hydro R.P.D. office. If a meter reading postal card is not returned, the consumption is estimated, and once a year the premises of customers are visited and readings checked. In the Niagara System there are 81,250 rural consumers and 94 per cent. of the readings are returned on time, 2½ per cent. are late and 3½ per cent. are not returned. The system, it was explained, has represented an important contribution to the conservation of rubber and gasoline.

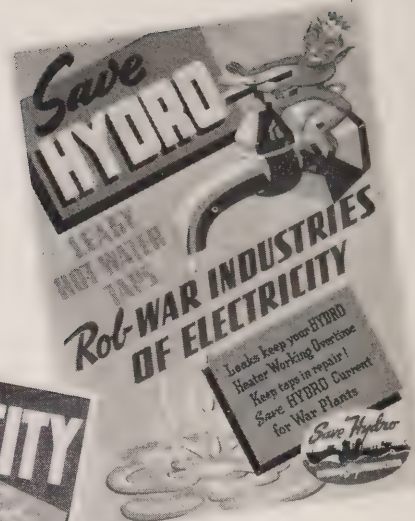
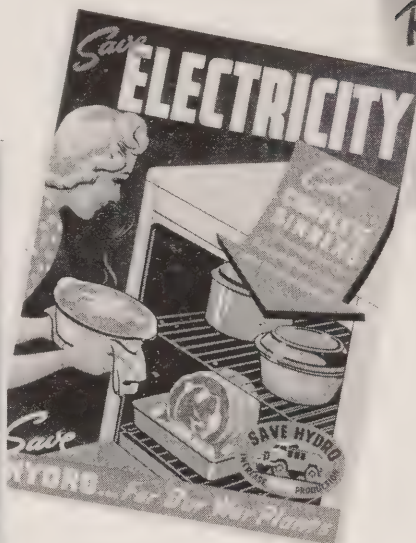
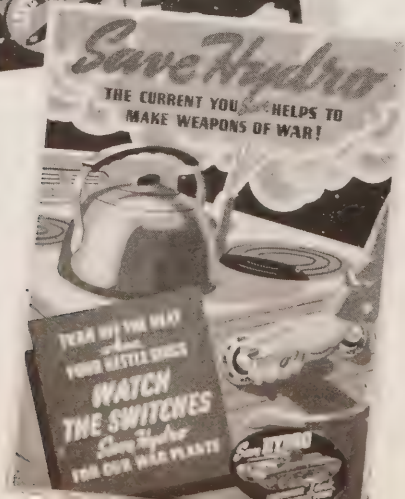
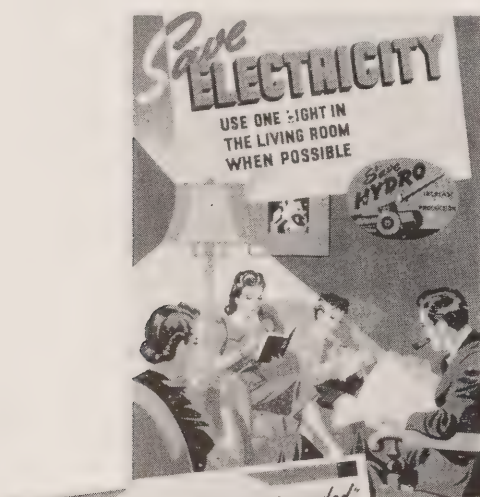
Charles F. Burgess, vice-chairman of the Public Utilities Commission of Carleton Place since 1935, passed away recently in his 74th year. A prominent business man and an active figure in public affairs for many years, Mr. Burgess was first elected to the Commission in 1928, and during 1933 and 1934 served as chairman.

CONCERNING CONSERVATION

By James A. Blay,

SALES PROMOTION DEPARTMENT, H.E.P.C.

It is extremely important that municipalities constantly appeal to their consumers to conserve electricity. During wartime there are ever-changing conditions to preoccupy the minds of users, and for that reason there should be no relaxation in the programme requesting consumers to save electricity to meet the shortage of power.



The showcards illustrated on this page are colourful, and were produced to be displayed in offices and windows, in order to convey visual conservation messages to people who pass your windows, or enter your offices to pay their lighting accounts.

Examples of possible savings are indicated by these cards: as an instance, it is estimated that a hot water tap dripping at the rate of 1 drop per second results in a loss of approximately 175 gallons of water per month. It can be readily appreciated that where electricity is used to heat water, considerable energy can be wasted because of a leaky tap. A very substantial saving can also be effected by encouraging consumers, who use electric ranges, to cook oven dinners rather than use the cooking top. In this way, a considerable amount of electricity can be conserved, because only one element is required for the oven dinner process whereas three or four elements are needed for cooking dinner on the surface of the range.

In the livingroom a rearrangement of lights will enable the family to gather around one lamp and eliminate the use of more lights than needed. When heating water on the electric range, the switch should be turned off as soon as the kettle sings. In most instances the heat stored in the element will bring the water to the boil. It is also essential to have the kettle free from lime as this acts as an insulator and increases the amount of electricity required to heat the water.

Along with the necessity of conserving electricity, it is important that all electrical home appliances be used with great care. The manufacture of practically all appliances has now been discontinued. The metals formerly required to make ranges, refrigerators, irons, toasters, and other electrical appliances are now needed to produce essential weapons. A direct contribution to the war effort can be made by prolonging the life of electrical home equipment. Consumers should be urged to keep it on duty for the duration.

Effects of Conservation Shown in Load Summary

A total primary load increase of 10.1 per cent for September, 1942, over the corresponding month last year is reported in the latest primary load summary. The load growth for this period has been influenced to a considerable degree by voluntary reductions in power demand during the month and by the restrictive order of the Dominion Power Controller, which became effective on September 20.

Based on the maximum 20-minute peak horsepower load for the respective months, the percentage of increase covers the operation of all four H.E.P.C. systems and the Northern Ontario Properties. The most pronounced expansion was in the highly industrialized Niagara system, where an increase of 213,137 horsepower was recorded.

The total peak demand for primary load in September, 1941, was 1,983,729 horsepower, while for September of this year it rose to 2,184,831 horsepower. Combined primary and secondary loads for the four systems and the Northern Ontario Properties totalled 2,268,772 horsepower, an increase of 5.6 per cent over the 2,149,138 horsepower load of September, 1941.

PRIMARY AND SECONDARY LOADS

	Maximum 20-Min. Peak H.P.		Per Cent
	Sept., 1942	Sept., 1941	Increase
Niagara System -----	1,667,024	1,541,421	8.1
Georgian Bay System -----	48,139	46,349	3.9
Eastern Ontario System ----	186,177	176,316	5.6
Thunder Bay System -----	103,579	110,643	—6.4
Northern Ontario Properties ..	263,853	274,409	—3.8
Total -----	2,268,772	2,149,138	5.6

LOAD CONSERVATION

(Continued from page 17)

that conditions following this war may not be as serious as those after the Great War. Advances in engineering and industry and the necessity for "catching up" on activities that have been retarded by the war he believed would open up new avenues of progress. Nevertheless, Hydro municipalities should maintain financial stability now in order to absorb the shock in the post-war transition period.

Endorsing the move of the other seven O.M.E.A. districts, District No. 4, on a motion by John Irwin of Brampton, seconded by W. C. Andrew of Streetsville, adopted a resolution calling for the standardization of electric range switches. President Kenneth Christie informed the delegates that the O.M.E.A. is now making application to the Canadian Engineering Standards Association for consideration of this resolution.

A vote of thanks was extended to the speakers of the evening, on a motion by Mayor Robert Worthy of Brampton, seconded by Reeve J. Warren of East York.

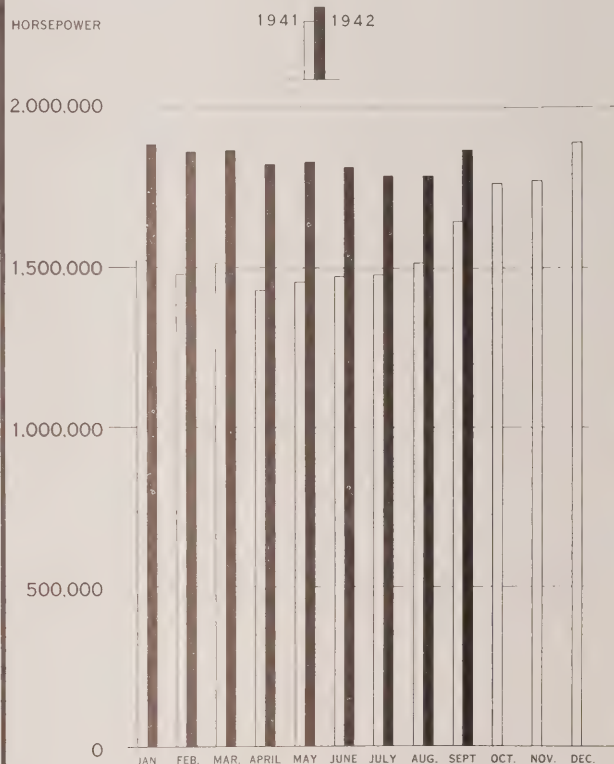
A showing of the film, "Wardens of Power", and three other films dealing with the war effort of the United Nations, concluded a highly successful meeting.

LOST WITH CARIBOU

William Bruce Wilson, aged 19, a former employee of the distribution section, engineering department, H.E.P.C., has been reported missing and is believed drowned following the torpedoing of the Caribou. Wilson, who was completing his training with the R.C.A.F., resided with his parents at 165 Macpherson Avenue, Toronto.

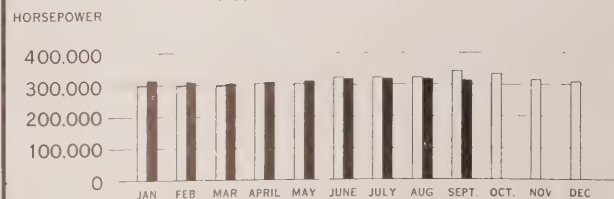
SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H P		PER CENT INCREASE
	SEPT. 1942	SEPT 1941	
NIAGARA SYSTEM	1,636,193	1,423,056	+ 15.0
GEORGIAN BAY SYSTEM	48,139	46,349	+ 3.9
EASTERN ONTARIO SYSTEM	186,177	175,907	+ 5.8
THUNDER BAY SYSTEM	100,871	105,563	- 4.4
NORTHERN ONTARIO PROPERTIES	<u>213,451</u>	<u>232,854</u>	- 8.3
TOTAL	2,184,831	1,983,729	+ 10.1

MUNICIPAL LOADS, SEPTEMBER, 1942

NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,620	1,903	Essex	630	1,886	Palmerston	589	1,400
Agincourt	226	P.V.	Etobicoke Twp.	7,058	V.A.	Paris	1,702	4,604
Ailsa Craig	135	487	Exeter	689	1,654	Parkhill	201	1,029
Alvinston	98	649	Fergus	1,414	2,759	Petrolia	934	2,768
Amherstburg	871	2,704	Fonthill	196	860	Plattsville	135	P.V.
Ancaster Twp.	386	V.A.	Forest	554	1,562	Point Edward	1,654	1,199
Arkona	87	403	Forest Hill	6,427	12,172	Port Colborne	1,741	6,928
Aurora	1,356	2,821	Galt	11,891	15,126	Port Credit	897	1,934
Aylmer	954	1,985	Georgetown	1,729	2,452	Port Dalhousie	1,049	1,599
Ayr	254	760	Glencoe	198	763	Port Dover	536	1,790
Baden	542	P.V.	Goderich	1,629	4,674	Port Rowan	97	700
Beachville	685	P.V.	Granton	81	P.V.	Port Stanley	939	824
Beamsville	434	1,227	Grimsby	750	1,988	Preston	4,094	6,656
Belle River	203	836	Guelph	11,150	23,074	Princeton	136	P.V.
Blenheim	492	1,873	Hagersville	1,243	1,347	Queenston	165	P.V.
Blyth	144	662	Harriston	448	1,292	Richmond Hill	501	1,295
Bolton	202	629	Harrow	627	1,092	Ridgetown	538	1,986
Bothwell	124	683	Hensall	214	686	Riverside	983	5,235
Brampton	2,997	5,975	Hespeler	2,884	2,938	Rockwood	130	P.V.
Brantford	19,675	31,622	Highgate	84	322	Rodney	143	758
Brantford Twp.	1,036	V.A.	Humberstone	533	2,831	St. Clair Beach	91	138
Bridgeport	153	P.V.	Ingersoll	3,137	5,757	St. George	155	P.V.
Brigden	87	P.V.	Jarvis	199	513	St. Jacobs	368	P.V.
Brussels	151	784	Kingsville	591	2,453	St. Marys	1,603	4,009
Burford	264	P.V.	Kitchener	26,597	35,456	St. Thomas	7,338	17,045
Burgessville	53	P.V.	Lambeth	117	P.V.	Sarnia	9,944	18,599
Burlington	1,554	3,925	LaSalle	245	907	Scarborough Twp.	4,440	V.A.
Burlington Beach	504	1,474	Leamington	2,169	6,048	Seaforth	788	1,782
Caledonia	351	1,430	Listowel	1,556	2,984	Simcoe	2,581	6,340
Campbellville	37	P.V.	London	38,226	77,105	Smithville	168	P.V.
Cayuga	126	700	London Twp.	468	V.A.	Springfield	70	382
Chatham	5,903	17,184	Long Branch	1,196	4,258	Stamford Twp.	2,567	8,275
Chippawa	345	1,228	Lucan	206	643	Stoney Creek	225	933
Clifford	105	491	Lynden	109	P.V.	Stouffville	317	1,198
Clinton	702	1,879	Markham	383	1,175	Stratford	8,271	17,163
Comber	142	P.V.	Merlin	83	P.V.	Strathroy	1,607	2,834
Cottam	71	P.V.	Merritton	9,796	2,916	Streetsville	250	701
Courtright	45	355	Milton	1,377	1,915	Sutton	297	949
Dashwood	111	P.V.	Milverton	388	994	Swansea	3,104	6,907
Delaware	74	P.V.	Mimico	2,387	7,987	Tavistock	725	1,080
Delhi	416	2,430	Mitchell	769	1,670	Tecumseh	515	2,331
Dorchester	92	P.V.	Moorefield	44	P.V.	Thamesford	241	P.V.
Drayton	127	528	Mount Brydges	100	P.V.	Thamesville	195	816
Dresden	440	1,525	Newbury	28	288	Thedford	110	598
Drumbo	125	P.V.	New Hamburg	663	1,441	Thorndale	87	P.V.
Dublin	46	P.V.	Newmarket	1,954	3,800	Thorold	2,321	5,284
Dundas	2,899	5,245	New Toronto	11,818	9,469	Tilbury	1,455	1,923
Dunnville	1,221	3,916	Niagara Falls	10,059	20,371	Tillsonburg	1,234	4,602
Dutton	249	830	Niagara-on-the-Lake	1,106	1,764	Toronto	349,307	657,612
East York Twp.	7,757	41,578	North York Twp.	8,764	V.A.	Toronto Twp.	3,122	V.A.
Elmira	1,059	2,069	Norwich	496	1,301	Wallaceburg	3,582	4,802
Elora	515	1,185	Oil Springs	182	541	Wardsville	33	221
Embro	143	420	Otterville	126	P.V.	Waterdown	259	867
Erieau	181	281				Waterford	482	1,294
Erie Beach	28	21				Waterloo	5,817	8,968
						Watford	403	1,023
						Welland	11,980	12,421

MUNICIPAL LOADS, SEPTEMBER, 1942

	H.P.	Popula- tion
Wellesley -----	138	P.V.
West Lorne -----	259	768
Weston -----	4,615	6,165
Wheatley -----	193	761
Windsor -----	46,662	104,415
Woodbridge -----	677	946
Woodstock -----	8,692	12,339
Wyoming -----	73	538
York Twp. -----	19,792	77,175
Zurich -----	154	P.V.

(25 and 66-2/3 Cycle)

Hamilton -----	153,488	164,719
St. Catharines -----	28,336	32,559
Trafalgar Twp. -----	599	V.A.

(66-2/3 Cycle)

Bronte -----	187	P.V.
Oakville -----	967	3,869

GEORGIAN BAY SYSTEM

(60-Cycle)

Alliston -----	410	1,700
Arthur -----	164	1,089
Bala -----	213	355
Barrie -----	4,278	9,559
Beaverton -----	300	941
Beeton -----	138	617
Bradford -----	204	1,041
Brechin -----	51	P.V.
Cannington -----	217	761
Chatsworth -----	72	333
Chesley -----	643	1,812
Coldwater -----	125	545
Collingwood -----	2,480	6,249
Cookstown -----	88	P.V.
Creemore -----	137	661
Dundalk -----	232	686
Durham -----	407	1,874
Elmvale -----	176	P.V.
Elmwood -----	62	P.V.
Flesherton -----	50	452
Grand Valley -----	129	645
Gravenhurst -----	1,076	2,261
Hanover -----	1,440	3,190
Holstein -----	14	P.V.
Huntsville -----	1,245	2,943
Kincardine -----	728	2,483
Kirkfield -----	25	P.V.
Lucknow -----	333	856
Markdale -----	199	776
Meaford -----	632	2,759
Midland -----	4,176	6,764
Mildmay -----	129	764
Mount Forest -----	501	1,936
Neustadt -----	40	431

	H.P.	Popula- tion
Orangeville -----	789	2,558
Owen Sound -----	5,367	13,559
Paisley -----	118	730
Penetanguishene -----	967	4,177
Port Carling -----	222	520
Port Elgin -----	575	1,415
Port McNicoll -----	67	950
Port Perry -----	308	1,175
Priceville -----	10	P.V.
Ripley -----	112	420
Rosseau -----	29	305
Shelburne -----	257	1,053
Southampton -----	643	1,467
Stayner -----	300	1,106
Sunderland -----	74	P.V.
Tara -----	113	510
Teeswater -----	135	873
Thornton -----	31	P.V.
Tottenham -----	92	532
Uxbridge -----	370	1,480
Victoria Harbour --	70	979
Walkerton -----	916	2,534
Waubauskene -----	110	P.V.
Wiarton -----	301	1,750
Windermere -----	63	117
Wingham -----	588	2,149
Woodville -----	64	439

EASTERN ONTARIO SYSTEM

(60-Cycle)

Alexandria -----	195	1,976
Apple Hill -----	49	P.V.
Arnprior -----	1,126	4,019
Athens -----	132	626
Bath -----	50	325
Belleville -----	7,646	15,498
Bloomfield -----	158	636
Bowmanville -----	2,752	3,850
Brighton -----	381	1,462
Brockville -----	4,801	10,576
Cardinal -----	363	1,602
Carleton Place -----	1,877	4,143
Chesterville -----	267	1,094
Cobden -----	82	643
Cobourg -----	2,496	5,907
Colborne -----	205	960
Deseronto -----	174	1,002
Finch -----	90	396
Frankford -----	152	1,095
Hastings -----	91	823
Havelock -----	136	1,103
Iroquois -----	240	1,123
Kemptville -----	344	1,230
Kingston -----	13,157	29,545

	H.P.	Popula- tion
Lakefield -----	323	1,301
Lanark -----	79	686
Lancaster -----	46	570
Lindsay -----	3,673	8,345
Madoc -----	184	1,130
Marmora -----	128	1,004
Martintown -----	33	P.V.
Maxville -----	111	811
Millbrook -----	85	749
Morrisburg -----	240	1,484
Napanee -----	1,456	3,241
Newcastle -----	220	701
Norwood -----	126	710
Omeme -----	124	630
Orono -----	84	P.V.
Oshawa -----	16,383	26,610
Ottawa -----	35,418	150,861
Perth -----	1,731	4,197
Peterbrough -----	12,189	24,977
Pictou -----	1,209	3,400
Port Hope -----	2,483	4,997
Prescott -----	1,472	3,283
Richmond -----	50	428
Russell -----	64	P.V.
Smiths Falls -----	2,785	7,741
Stirling -----	298	947
Trenton -----	5,171	8,183
Tweed -----	247	1,181
Warkworth -----	73	P.V.
Wellington -----	279	948
Westport -----	103	725
Whitby -----	1,572	4,236
Williamsburg -----	103	P.V.
Winchester -----	347	1,017

THUNDER BAY SYSTEM

(60-Cycle)

Fort William -----	13,989	30,370
Nipigon Twp. -----	188	V.A.
Port Arthur -----	40,858	24,217

NORTHERN ONTARIO PROPERTIES

Nipissing District
(60-Cycle)

North Bay -----	4,459	16,013
-----------------	-------	--------

Patricia District
(60-Cycle)

Sioux Lookout -----	299	1,967
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Sudbury District
(60-Cycle)

Capreol -----	204	1,660
Sudbury -----	8,645	32,731

THERE IS AN ACUTE POWER SHORTAGE

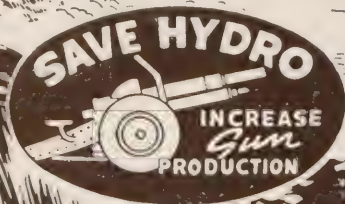
Save ELECTRICITY!

● Ontario industries produce approximately one-half of Canada's total war output. And electricity is the driving force that powers thousands of machines that produce the weapons of war. Today . . . more and more electricity is required to meet the expanding demands of our war effort. Present sources of this vital power supply are taxed to the limit . . . there is not enough for every need. Our war industries come first. Electricity must be conserved.

From the day war started, Hydro Engineers were keenly aware that additional electrical power would be essential. In spite of the difficulties imposed by a scarcity of materials, equipment and labour . . . greatly increased quantities of electricity have been provided. But . . . even with these important new developments . . . an acute power shortage threatens our war effort today.

Our munition plants must have all the power they need. Everyone can help them get it by reducing their consumption of electricity to a minimum . . . by conserving Hydro power wherever possible. Watch all the switches . . . in your home, office or shop . . . turn them 'off' when not needed. Remember! While individual savings may seem small, collectively they become a tremendous flood of power to meet the needs of our war production. Save electricity at all times.

INVEST IN VICTORY...SAVE ELECTRICITY!



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

"Nothing matters now but Victory"—Buy Victory Bonds



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HYDRO

News

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JAN 20 1943

"WHITE CHRISTMAS"

"When Joy Comes With the Morning Light When Children Gather 'Round Their Tree.."



IN HOMES where people can still observe this joyous season and all it symbolizes in our way of life, familiar scenes like the one portrayed above will be witnessed once again this year as old and young gather round the traditional tree in all its tinselled glory on Christmas morning. Things are not the same this year. Materials are scarce and folk who used to help Santa Claus are now helping to get these planes, tanks and guns to the boys in the front lines. And we can't spend our money as freely as we did. There are these bonds and certificates to buy and we musn't fall down on the job. But Christmas will still retain its cheery brightness for the children. There'll be a few toys, and the trees in homes can be illuminated between December 24 and January 1; in our churches we will again hear the immortal story of Bethlehem, and join in singing the old familiar carols. But, as we go forward into 1943, we shall be united in our determination to hasten the day of victory which will bring the meaning and peace of Christmas to all mankind.

HYDRO News

formerly The BULLETIN

THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



Taken by Ross Lemire of the
transmission section of the elec-
trical engineering department,
H.E.P.C., the arresting snow
scene reproduced on this
month's front cover bears the
appropriate title "White Christ-
mas." In the background it
shows one of the 1,500 Hydro
pole structures which extend
over a distance of 113 miles be-
tween Uchi and Crow River.

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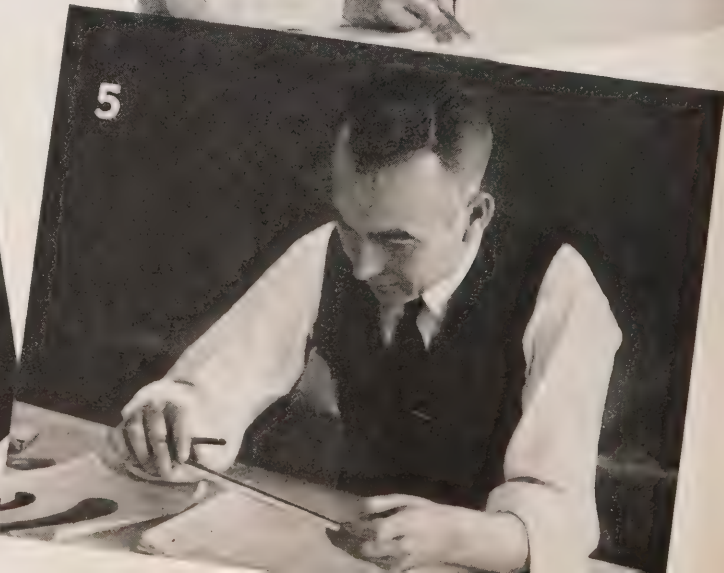
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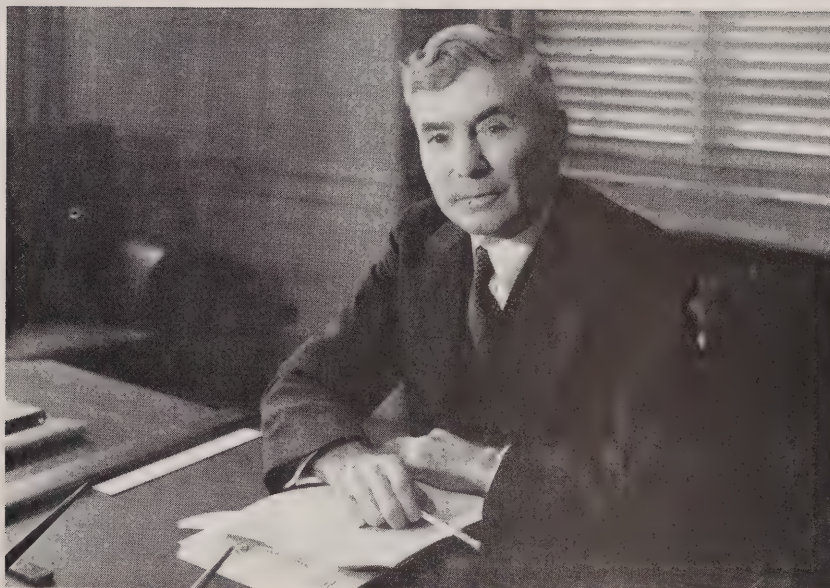


BLUEPRINTS FOR VICTORY

MANY Toronto folk who go to work early in the morning or return home late in the evening via University Avenue take a second look at the tall H.E.P.C. Head Office Building. They may have wondered why brilliant lights could be seen at a number of windows, particularly on the north and west sides. Could it be that Hydro was failing to live up to its own maxim of conserving power? These pictures tell the story back of the lights. No. 1 and No. 2 show sections of the busy draughting rooms in the hydraulic and electrical engineering departments. There, skilled draughtsmen and engineers work early and late making accurate and detailed layouts for new power developments. In designing these blueprints for victory, they use such instruments as pantographs, planimeters, proportional dividers, T squares, set squares, draughting machines and slide rules. Work of this character requires good light. The fluorescent lighting in these rooms is not only bright, but it is cool and consumes only about 30 per cent of the electricity required by ordinary lighting. The draughtsmen at work are: No. 3, James Stuart; No. 4, Robert Lyle; No. 5, Zymond Tworek and No. 6, J. F. Enright.



* Page Three *

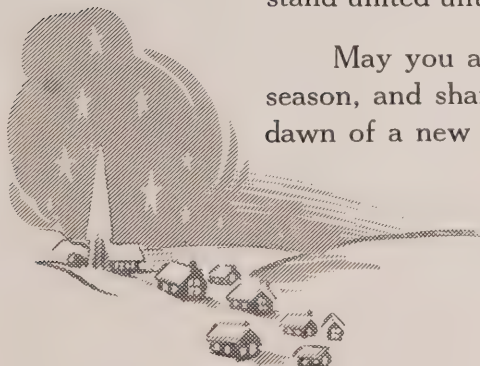



A Christmas Message

AT this season of the year, when our thoughts again turn to the significance of the first Christmas Day with its message of Peace on Earth to Men of Goodwill, all members of the great Hydro family will, I am sure, rededicate themselves to the faithful accomplishment of the vital task they have been called upon to undertake. In common with all fellow Canadians, the people of the Mother Country, our Sister Dominions and our courageous Allies, we will stand united until final victory has been won.

May you and your families enjoy the blessings of this season, and share in the greater joys which will follow the dawn of a new and enduring peace upon a war-torn world.

J. M. Hogg





HYDRO helps OSHAWA

"Keep 'em Rolling!"

BACK in the carefree days of peace when you could pull up at a gas station and say, "Fill 'er up," Oshawa was a name synonymous with popular Canadian-built cars.

Today, it's different. Instead of the sleek streamlined automobiles which once clicked off the assembly lines at the great General Motors plant, rugged, drab-coloured wagons of war are roaring over the test tracks, and Hydro is helping to keep 'em rolling. This great war-gear industry, now using a third of the entire Oshawa power load, has turned out more than 145,000 military vehicles of all types since the outbreak of the war. These, along with other Canadian-built units, have been credited in official dispatches and by war correspondents with playing a major roll in bringing about the Italian and German débâcles in Libya. Today, these Canadian-made vehicles are again in the van-guard of battle on many fighting fronts.

Network of 100 Industries

Oshawa, one important reason why Canada stands high on the list of democracy's arsenals, is a place where boy

meets girl at the Four Corners, and where towering, ungainly railway freight cars clang along the centre of main thoroughfares. It is a place where the daily life of 27,000 people—32,000 if you include surrounding suburbs—is directly and indirectly affected by "The Motors" which is the throbbing hub of the city's network of approximately 100 industries. It is also the home bailiwick of Ontario's present Premier, Hon. Gordon Conant, who was a member of Oshawa's first Public Utilities Commission which officially took over the operation of Hydro in that area on January 1, 1930.

To Make "Mosquito" Fuselage

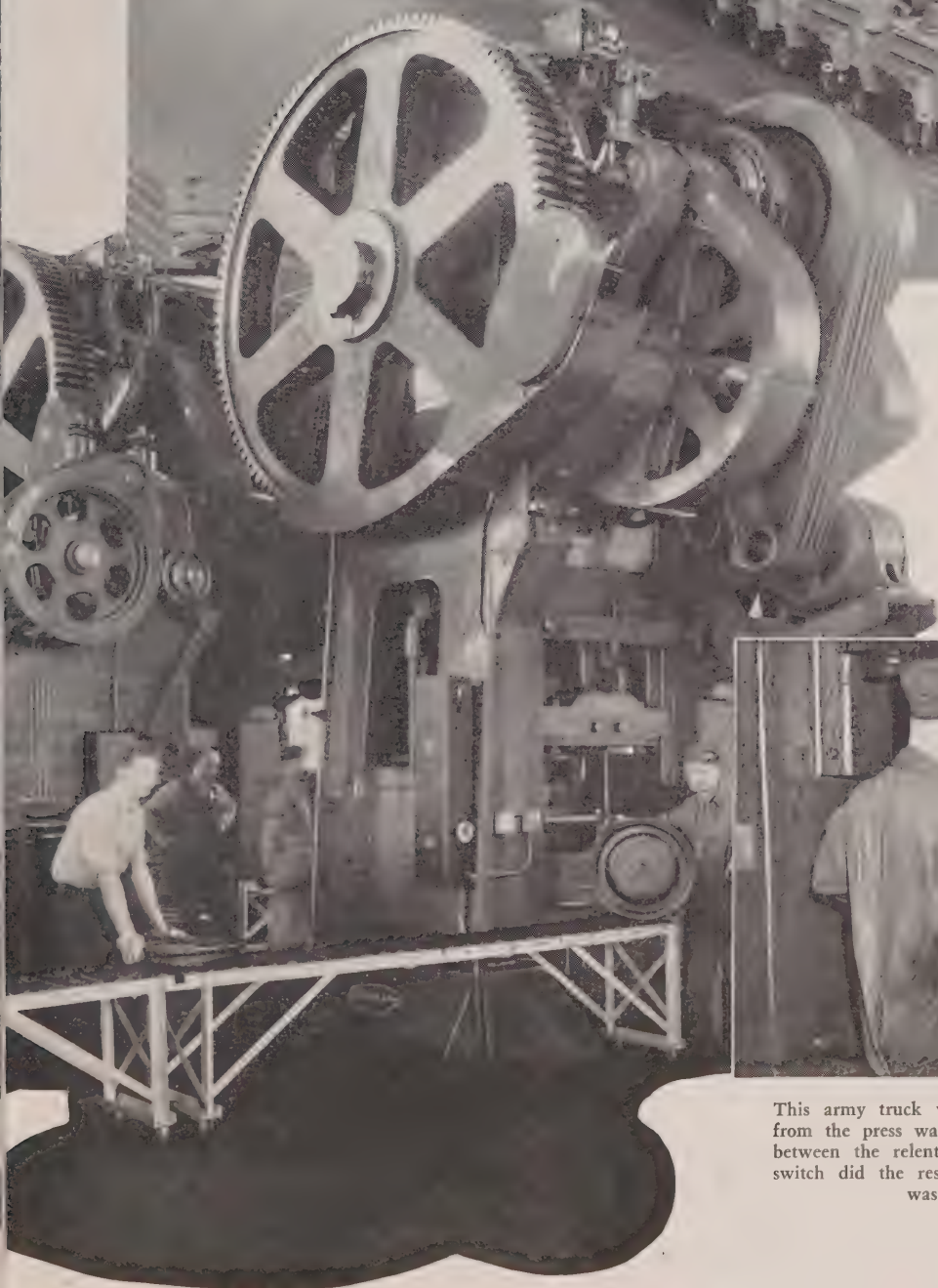
At the great General Motors plants, which sprawl over many city blocks, thousands of workers keep machines and assembly lines whirring and clicking day and night, turning out a steady flow of military combat and transport vehicles, mountings for naval guns and recoil mechanisms for 6-pounder anti-tank guns. They're turning out other things at Oshawa but, as Tom Elliott, General Motors genial and enterprising public relations director, will tell

(Continued on page 6)



This is a typical scene at the General Motors plant. These military vehicles have undergone gruelling tests on the track and have passed final inspection. They are now ready for shipment to secret destinations. To the right of the picture is the G.M. main office building.

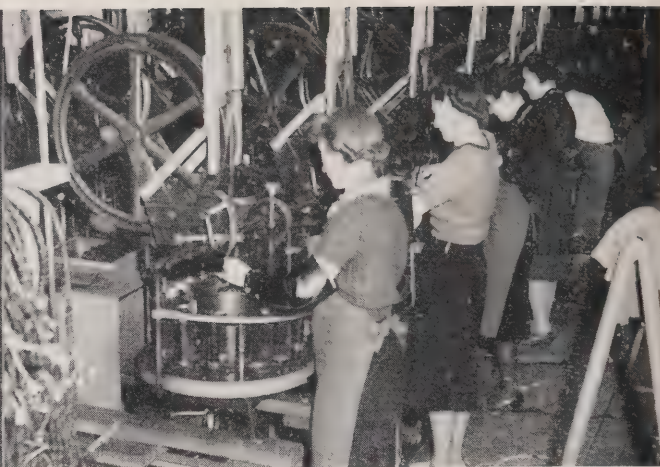
At the G.M. stamping plant, these mighty presses, each powered by a 100-horsepower electric motor, are designed to make sixteen and twenty-inch wheels for army trucks. Each exerts a downward pressure of 1,500 tons. It was necessary to carry the reinforced concrete under-supports down 22 feet to the sub-basement.



This army truck wheel which the workman (above) is removing from the press was a flat 5/16-inch steel disc when it was placed between the relentless jaws of this giant machine. A touch of a switch did the rest. After being "punched" in a second press it was sent to the assembly department.



This G.M. workman is engaged in one of the many operations involved in the making of military vehicles.



Many girls are employed at the G.M. plant. The members of this group are working on electric wiring for trucks.

(Continued from page 4)

you, these items are still on the secret list. It's no secret, however, that G.M. will soon be making fuselage for the sensational Mosquito bomber which was described recently by Hon. C. D. Howe, Canada's Minister of Munitions and Supply, as the fastest bomber in the service of the United Nations. In addition to carrying on a tremendous war production programme, G.M. has placed service men in each of the thirteen military districts in Canada, thus carrying service to the training camps as well as the fighting fronts. And there are more than 1,200 G.M. employees from Oshawa alone in the fighting forces, and several hundred who are on loan to the government for the duration.

Hydro, the great driving force behind Oshawa's high-geared war industries, is administered by a progressive commission comprising William Boddy, chairman; Samuel J. Babe, George Garner, C. E. McTavish and Dr. W. H. Gifford who is mayor of The Motor City.

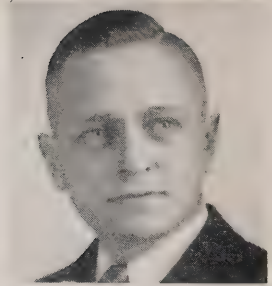
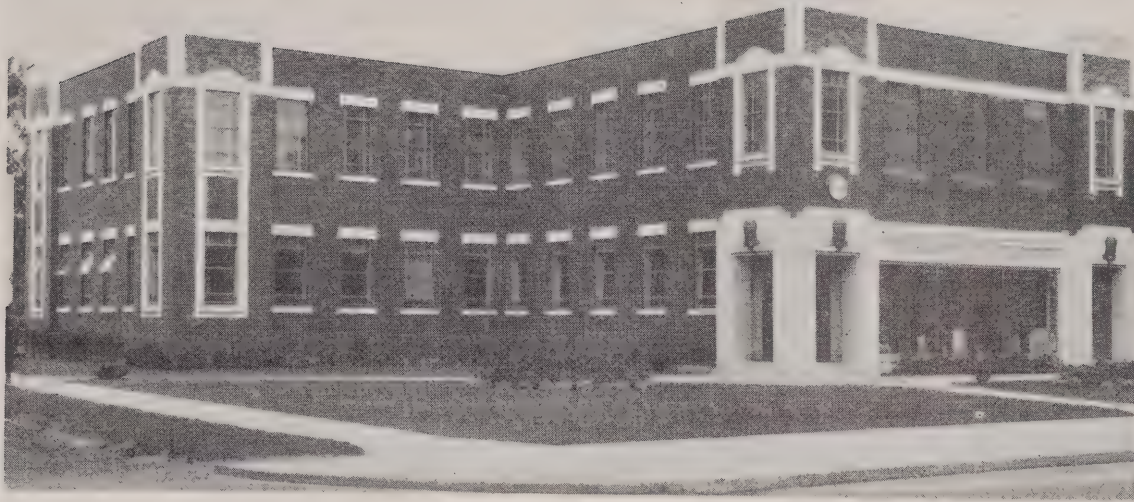
Load of 17,000 Horsepower

At 100 Simcoe Street South, the G.H.Q. of Hydro in Oshawa, *Hydro News* met George F. Shreve, the general manager, whose personality reminds one of Mr. Pickwick, the famous pen character created by Charles Dickens. Like

(Continued on page 8)

Recoil mechanisms for anti-tank guns are among the many production jobs which are being done at the G.M. war-geared plant.

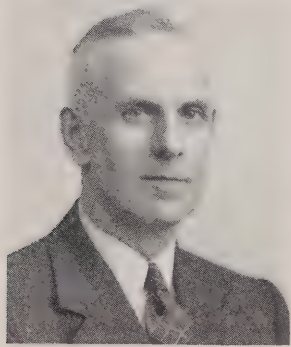




Dr. W. H. Gifford,
commissioner.



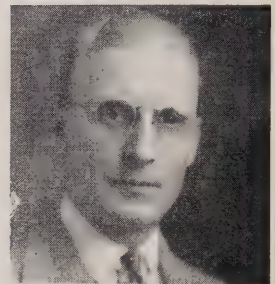
Samuel J. Babe,
commissioner.



When the visitor to Oshawa sees the building shown above, he knows he has arrived at 100 Simcoe Street South which is the headquarters of Hydro in the Motor City.

Meet William Boddy, (left) chairman of the Oshawa Public Utilities Commission. Mr. Boddy, a native of Darlington township, was a member of the Oshawa council for 4 years.

The picture to the right of Mr. Boddy shows George Shreve, general manager of the Public Utilities Commission. Other members of the present commission are listed on this page.



George Garner,
commissioner.



These are the men who served as members of Oshawa's first commission. They are: T. B. Mitchell (deceased), F. L. Mason, chairman; W. H. Ross, G. D. Conant (now Hon. Gordon D. Conant, Premier of Ontario) and John Stacey.



C. E. McTavish,
commissioner.



Fred E. Hare,
clerk.



Night and day military vehicles of all types are moving off Oshawa's assembly lines to keep "Motors on the March" on the battlefronts of the world. This illustration shows one of the final assembly lines in the G.M. plant.

(Continued from page 6)

Mr. Pickwick, Mr. Shreve's countenance beams with sunny smiles, laughter plays round his lips and good-humoured merriment twinkles in his eyes as he talks.

While discussing Hydro and Oshawa—two subjects with which he is thoroughly familiar—Mr. Shreve provided some interesting statistics that reflect the job Hydro is doing in this important Ontario centre. In September, 1939, the load was touching 13,000 horsepower, and today it is running between 16,000 and 17,000 horsepower. Approximately 75 per cent of that load is being utilized by industries which employ more than 10,000 war workers. The records also show that there are close to 7,500 domestic, commercial and industrial consumers, and approximately 3,000 rural consumers of electricity.

In common with other busy centres, Oshawa has a housing shortage problem. As many as five families are living in some of the larger homes. Fifty wartime houses were built last fall and applications were in for these dwellings long before they were built.

However, a building programme is now proceeding in a rural area served by the Oshawa Hydro. Under this scheme 600 new homes have been authorized and 400 of

that number are now nearing completion. This project will, of course, result in an increase in the number of rural consumers.

Hydro Marches with Oshawa

While in Mr. Shreve's office, *Hydro News* noticed on the walls a number of interesting framed photographs including those of the late Sir Adam Beck and the first Oshawa Public Utilities Commission of 1930. One of this original group—T. B. Mitchell, a former mayor of Oshawa—passed away two years ago. The others shown in this picture, which is featured along with this article, are F. L. Mason, chairman; W. H. Ross, G. D. Conant (now the Hon. Gordon D. Conant, Premier of Ontario) and John Stacey.

Established upon the solid foundation laid by the H.E.P.C. and the work of that original commission, Hydro has marched onward with Oshawa through the days of peace, contributing in an ever-increasing degree to both the social and economic welfare of that industrious community. Today, Hydro is carrying on in The Motor City and will help "Keep 'Em Rolling" until victory has been achieved and a new and still more progressive era of peace returns.

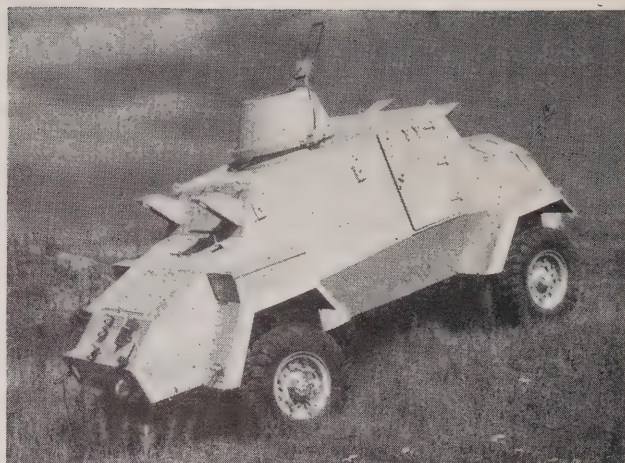
GEORGE DID IT

IT'S much less embarrassing to be seated in a comfortable chair behind a desk than on top of a leaking gas tank in a flaming plane.

Ask George Shreve, general manager of the Oshawa Public Utilities Commission, for during the last war George was a pilot after he had served with the artillery, and he has a scar on his right wrist to remind him of a "hot" experience in the Cambrai-Arras vicinity.

At the time he was flying a model S.E.5, and was getting in some low strafing when a piece of shrapnel hit the plane. George found himself surrounded by a searing wall of flame and on top of a riddled gas tank. Acting quickly, he grabbed the joy stick and sent the plane into a side slip with the result that the flames were carried away from him. Then followed more quick thinking as he loosened his safety belt. There was only one thing to do and that was a pancake landing. George did it and somehow managed to scramble out of the burning plane with his clothes afire. His helmet and gloves had to be cut off, but his most serious injuries were burns on the face and right hand.

Perhaps it's lucky to be born on a farm near Chatham!



Light reconnaissance cars play a vital role on the battlefronts in this war. This picture shows one of these Oshawa-made units.

NEW OFFICERS ARE NAMED BY HYDRO LEGION BRANCH

Officers elected for the ensuing year by the Ontario Hydro Branch (No. 277) of the Canadian Legion, B.E.S.L., are as follows. C. V. Somers, president; E. J. Taylor, first vice-president; J. N. Crawford, second vice-president; G. F. Aram, secretary; H. J. Ayris, treasurer; Executive: W. L. Dymond, S. W. Egan, R. H. Roe, E. V. Butt, and E. L. Thomson (ex officio); Auditors, W. Farquhar and G. W. O. Walker.

Proceeds from the annual Christmas draw are being used to send comforts to enlisted Hydro men, to the sons of staff members who are members of the Legion, and for the welfare of Branch No. 277.

Bristling with guns, this consignment of light reconnaissance cars are ready for shipment to a place where they will be useful.



FATHER TIME



FATHER TIME seems to pass on tiptoe since electricity became the "mainspring" of the many clocks which are now in service in homes, offices and factories.

In contrast to their tick-tocking brethren, these timepieces go about their "round-the-clock" job in an unobtrusive and almost obsequious manner, quietly recording the changing panorama of life, history and progress.

Many questions have been asked concerning this branch of the "Silent Service" in the watch family, and some of the answers may be of interest to a number of readers of Hydro News.

An electric clock keeps time because it is driven by what is known as a synchronous electric motor, the speed of which, in revolutions per minute, is directly proportional to the frequency of the supply circuit in cycles per second. Accuracy in time-keeping by these clocks is maintained at the generating station where a master clock is used to check the frequency of the system.

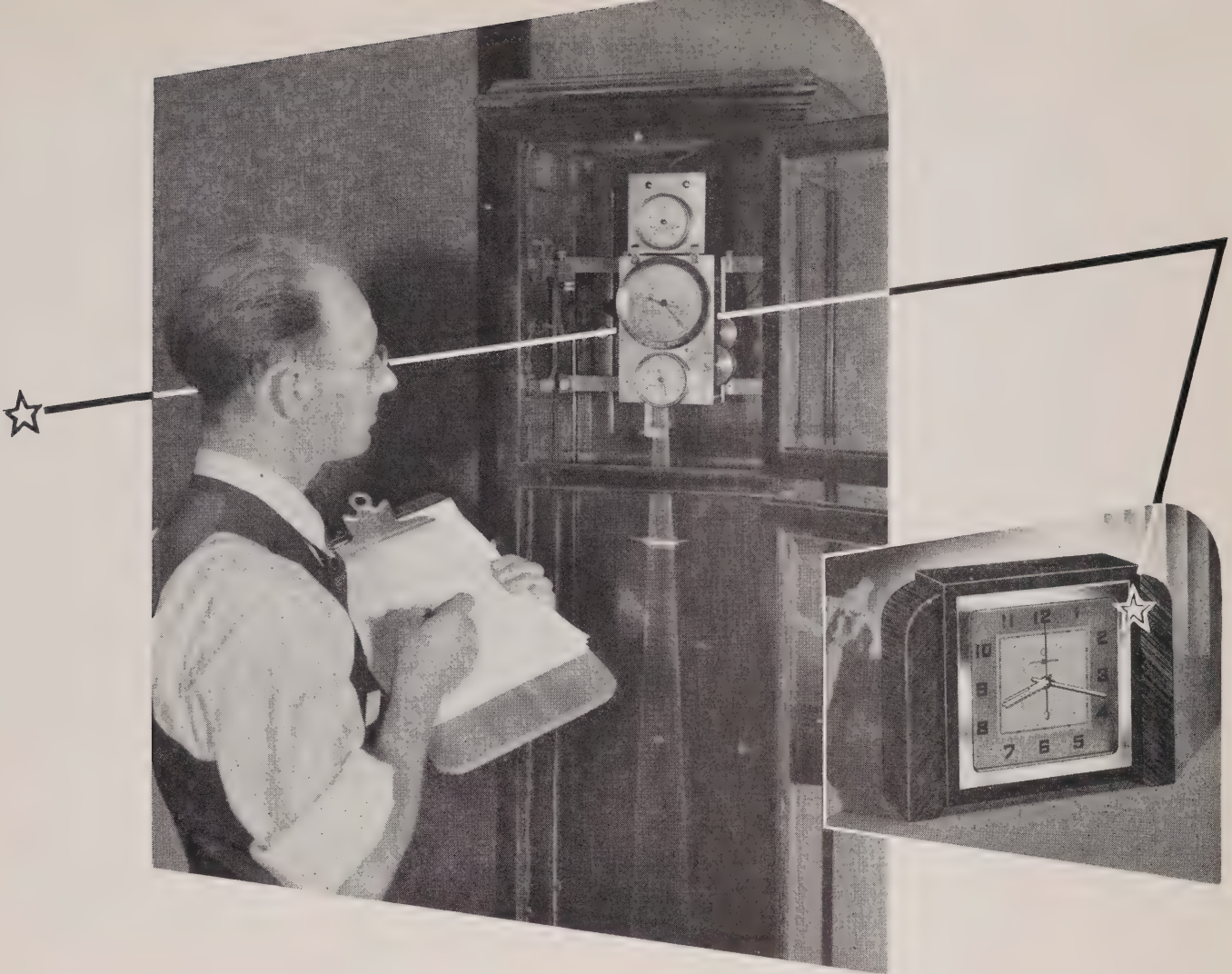
This master clock is a high grade mechanical chronometer of the pendulum type. On its face are two sweep second hands, one of which is driven by an electric clock motor, supplied at system frequency, and the other by the chronometer mechanism. These hands are intended to revolve together, and any angular difference in their positions immediately indicates that the electric clocks are either fast or slow, the degree of deviation showing the number of seconds "out" either way. It is usually considered satisfactory if the error does not exceed three or four seconds—an error which is corrected during the night operation of the power system.

The accuracy of an electric clock is quite independent of its distance from the master clock. Accuracy is also independent of the voltage so long as the voltage in question is high enough to run the motor.

"What doesn't make it tick?" is a question which has been asked by many laymen. The answer is that there are no oscillating parts such as pendulum, balance wheel and escapement which are to be found in mechanical clocks. A motor and a train of gears with hands attached are the only moving parts in an electric clock, and they revolve quietly. (These facts, of course, do not apply to systems where a number of clocks throughout a building are controlled by electric impulses sent at definite intervals by one master clock.)

Electric clocks are not universal as to frequency. In other words, they must have a particular and precise frequency in order to keep time accurately. A 25-cycle clock on a 60-cycle circuit would likely record a day within 10 hours, whereas a 60-cycle clock on a 25-cycle circuit—if it did not burn out—would require 57.6 hours to indicate a full day.

It is now many moons since time was first recorded by the movement of heavenly bodies across the sky, but with the invention of clocks Father Time really became "mechanized." "Tempus Fugit," has been one of the most popular phrases used to describe his tempo of progress, while in recent years he has been doing plenty of "Marching." The electric clock, however, is perhaps one of the most faithful portrayals of his speed, suggesting that he moves inexorably onward—and on tiptoe.



Here is a view of the master clock at the Queenston plant. It contains two independent movements, one a very accurate time-keeping device actuated by a pendulum, and the other driven by a small synchronous motor. Two large second hands rotate independently over the centre or operating dial which is about 5 inches in diameter. In this way generator speed can be quickly compared with standard time. The dial at the bottom is a mechanical clock driven by a pendulum, and the top dial is an electric clock operated by a separate synchronous motor. A station operator can be seen comparing the dials in order to check the time. Had these photographs been taken at the same time, the hands on the electric clock (inset) would have been in the same position as the hands on the master clock.

New Jackfish Library

BY Phyllis Foreman
LIBRARIAN, H.E.P.C.

SOMETHING new in the work of the Commission's Library will be inaugurated early in the new year with the placing of a library in Jackfish camp where 300 members of the H.E.P.C. construction staff are employed on the Ogoki diversion project.



Miss Foreman

Comprising approximately 100 volumes at the outset, this library has been planned for the benefit of these men who are far removed from centres where libraries and other recreational facilities are to be found.

For those who want a good story to fill in an evening, there will be a wide choice of "mysteries" or "west-

erns" by such authors as Zane Grey, John Buchan, Max Brand, Ellery Queen and E. P. Oppenheim. More general fiction will include Cronin's "The Citadel," Llewellyn's "How Green Was My Valley," Nordhoff and Hall's "Hurricane." War books include Robert St. John's "From The Land Of Silent People," Shirer's "Berlin Diary," Strong's "The Soviets Expected It," and White's "They Were Expendable." Three magazines also go with the library: Life, Reader's Digest and Maclean's.

The books will be fully prepared for circulation at the head office library, and will be sent up complete with cards and catalogue, and book lists giving brief annotations. To supplement the initial collection, some new books will be sent up every month, and in selecting these, first choice will be given to requests from the camp. In this way, it is expected that the library will meet the reading interests of all members of the camp.

The new library at Jackfish will be under the supervision of a representative of the Frontier College.

WARTIME SYSTEMS

By R. E. JONES

Priorities Division, H.E.P.C.

WE have been at war for three years and the end is not yet in sight. We cannot all serve in the armed forces, but we must—not may—help. One important way to assist in the war effort is to conserve the dwindling supply of essential materials. The alternative is the possible losing of future battles due to lack of the equipment of modern warfare.



R. E. Jones

An enemy agent who removed and destroyed ammunition from a military dump would be rightly condemned. Are you any better if you use essential materials needlessly? The contention that others are doing it is no excuse.

New line extensions should be made only to give service to the armed forces, essential war industries, and to such houses that have no other means of lighting.

A certain amount of maintenance is necessary, but for the present we must forget some of our ideals. If a piece of equipment will do the work reasonably well, and does not constitute an accident hazard, it should remain in service as long as possible. Maintaining well designed standards, close voltage regulation, and good appearance are luxuries too costly in essential materials for these times.

Having the material on hand is no excuse for using it. Material in stores is material in Canada and, eventually, it may be required by yourself or by others for emergency repairs.

At present, the shortage of materials is greatest in aluminum, tin, copper, rubber, steel and zinc.

When construction is necessary, there are many ways of saving essential materials, either by omission of parts or by substitution. A little time spent in consideration of the various parts of a distribution system will bring to light many places where such savings can be made. Here are a few examples which have been proven in practice:

1. An anchor log may be used in place of a steel or so-called patent anchor; 15 lbs. of steel saved.
2. Guy hooks may be eliminated by wrapping guy cable around the pole; 1 lb. of steel saved.
3. Guy cable may be served instead of clamped; a little more labour, greater strength and 8 lbs. of steel not used.
4. Wood guy guards will give as good protection as steel for several years.
5. Steel crossarm braces may be replaced by a single wood brace with a saving of $3\frac{1}{2}$ to $5\frac{1}{2}$ lbs. of steel for each arm. Fifty per cent of this saving can be made by using one steel brace per arm.
6. Primary conductors may be dead-ended with strain insulators instead of clevises; $4\frac{1}{2}$ lbs. iron per wire saved.
7. Pole steps, which weigh one pound each, are very convenient but not necessary.
8. Years ago wood side blocks were used to support



Among the many fine amateur photographers on the Commission's head office staff is H. H. Leeming of the electrical engineering department. The illustration above is one from his extensive collection of interesting prints. It was taken during a visit to Port Arthur whose enterprising Public Utilities Commission marked the retirement of all debt against the light, power and street railway departments this year. While at this transformer station during a thunder storm Mr. Leeming saw the possibilities of a picture, and, by using a yellow filter, he dramatized the setting and accenuated the cloud effects.

secondary conductors. Reversion to this form of construction except at dead-ends and angles would save a lot of steel. If horizontal construction can be used a crossarm may be erected, but more material will be used than with side blocks.

9. For the lighter loads steel conductors may be used in place of copper or aluminum.

10. Line taps may be made with a tight serve without the use of solder or copper clamps.

11. Metal pole signs and numbers may be replaced by stencilled figures painted directly on the pole. They will last for several years.

12. In making a joint on a lead covered cable, wiping solder can be saved by wiping a smaller area at the end of the sleeve.

13. A survey of transformer loading will indicate where it is necessary to replace. A short-time overload of 25 per cent will not harm the transformer.

14. Where common neutral system is used it may be possible to remove a certain amount of duplicate neutral.

Before using any essential material, ask yourself—will this help the war effort?—and be honest with yourself.

NEW CONSTRUCTION DURING PAST YEAR

**Commission Has Spent \$15 Million On New Power Development
Projects In That Period And Over \$50 Million
Since The Outbreak Of War**

By Dr. Thomas H. Hogg,

CHAIRMAN AND CHIEF ENGINEER, THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

TO meet increasing demands for power by Ontario's ever expanding war industries during the past year, the Commission has spared no effort in hastening the completion of new generating facilities.

In that twelve-month period alone the sum of \$15 million has been expended, which means that a total in excess of \$50 million has been spent on new construction since the outbreak of the war. In all, 427 projects were undertaken during the year and 318 have been completed. Hydraulic operations in particular have been very active, work on the Ogoki diversion and other projects having continued at a steady pace.

Make Good Progress

Barrett Chute development was placed in service during the year adding another 48,000 kv-a generating capacity to the Commission's Southern Ontario network. At DeCew Falls construction was in full swing and good progress was made on all phases of this new development. The second unit at Big Eddy was placed in service in November, 1941, and the plant was operated with temporary switching until the early summer of 1942, when the permanent switchboard and metal-clad structure were installed. Within the past twelve months over 200,000 kv-a in additional transformer capacity was placed in service.

Line work, due to wartime restrictions on rural distribution, was somewhat curtailed. Nevertheless, some 350 miles of conductor were dismantled for the purpose of securing materials to erect over 550 miles of new con-



Barrett Chute, showing rock ledges between pipe lines.

struction. Most line work carried out during the year consisted of extending lines to serve war industries, and in some cases to increase the capacity of existing lines already serving such industries.

On the Ogoki diversion, the main dam at Waboose Rapids and the two adjacent auxiliary dams have now been completed. The reservoir created by these dams and other auxiliary dams at Chappais lake and Snake Creek, completed during the year, will cover an area of 120 square miles. The channel and control works at the height of land have also been completed, ready to pass the flow of water into South Summit lake, and thence to lake Nipigon and the Great Lakes. The new railway bridge, built at Jackfish Crossing near lake Nipigon to provide for the diverted water, was finished in October. The channel work at this latter point will be completed early next summer when the diversion project will be placed in operation.

Ogoki Project Nearing Completion

Good progress has been made at the DeCew Falls development, which will eventually make available an additional 65,000 horsepower to the Niagara system. The excavation of the new headworks canal, and headworks, now completed, entailed the removal of 75,000 cubic yards of earth and 80,000 cubic yards of rock. Excavation of an unusually large amount of earth and rock was necessary before construction of the powerhouse substructure could be started. This excavation involved removal of 500,000 cubic yards of earth, and 170,000 cubic yards of rock, and

(Continued on next page)



Headworks superstructure looking east at Barrett Chute.

was completed in October, the first concrete pour having been placed shortly afterwards. To complete the head-works substructure, ready for the installation of the gates, required the placing of 5,000 cubic yards of concrete. The penstock excavation was finished and work on the forms for concrete saddles commenced. These saddles, when completed, will support a sixteen and one-half foot steel plate penstock which will later be encased in concrete.



Cableway in operation at Niagara rock weir.

The construction schedule calls for delivery of power July 1, 1943.

Barrett Chute development was brought to a successful completion during the past fiscal year. This project entailed the construction of a main dam 1,200 feet long and 100 feet above the bedrock of the river. A few minor



New Jackfish railway bridge at Ogoki diversion project.

details, which have been held up pending arrival of materials, are yet to be completed.

Bark lake dam, providing some 300,000 acre-feet of storage for the Barrett Chute and Calabogie plants, was completed this spring. A number of smaller storage reservoirs were also brought into service on the upper reaches of the Madawaska river watershed.

Rock Weir at Niagara

The construction of a submerged rock weir across the Niagara river, to restore the water level of the river in the Chippawa-Queenston Island Pool and to redistribute the flow, is proceeding satisfactorily. When completed, the

HORTICULTURAL CLUB NAMES NEW OFFICERS

AN active season of flower shows and instructive meetings has just been concluded by the Horticultural Section of the Ontario Hydro-Electric Club. At its recent annual meeting the executive reported a total enrolment of 204 enthusiastic garden devotees who have found the organization a happy medium for profitable discussion of flora and fauna.

As a contribution to the war effort, the Horticultural Section has voted a grant of \$40 to the club for war service activities, and the sum of \$20 has been allocated for the purchase of seeds to be sent to Great Britain.

Transportation difficulties caused a reduction in the number of entries in the various exhibitions during the year, but numerical deficiency was counterbalanced by the quality of show entries. They were more than 340 entries in various classes in the three exhibitions held during the season: the Iris Show on June 3rd; the Rose and Peony Show on June 17th; and the annual Fall Flower Show on September 4th.

A pleasant feature of the year was a supper meeting held jointly with the Horticultural Club of the Toronto Hydro-Electric System at the latter's Murray street club rooms, at which L. H. VanCleave delivered an instructive talk on plant life and general garden lore.

The season was brought to a successful conclusion at the annual business and dinner meeting held at the Diet Kitchen Tea Rooms, Toronto, on November 20th, under the chairmanship of J. F. MacLaren, retiring president. The guest speaker of the evening was A. J. Webster, past president of the Ontario Rose Society, who discussed the care and culture of various types of climbing rose. Prizes were distributed to those who had submitted winning entries in the displays held throughout the year, with high individual honours going to Messrs. J. F. MacLaren, J. C. Murton and J. E. Stark.

The following officers were elected for the ensuing year: president, W. H. Carr; vice-president, A. B. Hayman; secretary, H. R. Hill; treasurer, Miss Tessa MacPherson; directors, one year: J. E. Stark, Miss M. M. Joyce and F. J. Ingrahan; two years: A. H. Sharpe, J. J. Traill and A. W. Smith; auditors, G. M. Lumgair and O. H. Kleiser.



Waboose dam—Ogoki diversion.

weir will be 1,700 feet in length, 40 feet wide at the top, and from 2 to 10 feet high. Rock fill placed during the year totalled 20,000 tons.

SELECTION OF SWITCHES FOR CONTINUOUS LOADS

By H. J. McCaw,

ELECTRICAL INSPECTION DEPT., H.E.P.C.

YOU may have installed a 100-ampere switch or a 200-ampere switch in days gone by, and it may have operated for years without trouble. Lately, perhaps, you may have installed a similar switch and experienced trouble with overheating. You had taken into consideration that the load would be less than the rating of the switch, and immediately, you became suspicious that switches are not as good as they used to be.

Previously the switch was not loaded to its present capacity; and again it did not work 24 hours a day, 7 days a week. It probably worked 6 to 8 hours a day with a week-end rest, and had plenty of capacity to spare.

These days, a load is estimated, and before the switch you ordered is delivered, the load has probably increased; and, as a larger switch cannot be obtained, you use the one you can get. This is, of course, one of many wartime problems we have to face.

A combination of circumstances is responsible for these temperature conditions and, to date, the complete solution has not been found.

Years ago, tests on unfused switches were based on a permissible rise of 30° Centigrade when they were carrying rated current. When fused switches appeared, and an attempt was made to apply the same tests, difficulties were encountered because of the heating of the fuses. It was decided to test fused switches without fuses and use "dummy" fuses, consisting of a brass tube of suitable dimensions.

Under existing C.E.S.A. requirements for protective equipment employing fuses, such as enclosed switches or panelboards, manufacturers are required to meet temperature tests using these "dummy" fuses. The low resistance of these "dummy" fuses has a negligible effect on the heat produced in the equipment. Therefore, it is considered to be a fair test on the equipment itself, having in mind the possible and permissible variation in the approved fuses which may be used with this equipment and the heating they contribute. It should be remembered that fundamentally, fuses are heaters, and in service, their heating effect is marked, being greater when the load is continuous throughout its duration, and especially when maintained

(Continued on page 18)

INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS



This picture was taken at the 38th annual banquet of the International Association of Electrical Inspectors at the Book Cadillac Hotel, Detroit, on Oct. 7. Canadians in attendance included W. P. Dobson, H. J. McCaw, and G. W. Howse of the H.E.P.C.; E. W. McLeod of the C.E.S.A.; J. N. Mochon, chief examiner, Board of Examiners of Electricians, Quebec, and George Newman, city electrician, Winnipeg; and S. Langley, Amalgamated Electric Corp. A paper on "The Electrical Industry in Canada" was given by Mr. Dobson. Canadians are seated at the third table up from the bottom right hand side.

SABOTAGE



POLICE and citizens of Galt are keeping their eyes open for boys and men who have been committing sabotage by using street lights as targets for air rifle practice. This form of sabotage has been brought to the attention of the public in an original and effective manner by H. R. Hatcher, the enterprising manager of the Galt Public Utilities Commission. The latter has collected a few of the shattered globes from various districts and has arranged them in the form of the striking window display shown above. Inscriptions on the cards give the locations where the various globes were damaged. Investi-

gations to date show that the "saboteurs" are most active in districts near the city limits. Already many air rifles have been seized by police in these districts. Mr. Hatcher points out that the Commission has not only to foot the bill for replacements but it is faced with a serious problem in getting replacements because of the wartime shortages of materials. During 1941, he stated, the Commission paid out nearly \$1,000 to replace broken globes, and for the first 10 months of this year, these costs have jumped by more than 30 per cent. "Sabotage has got to stop," declared Mr. Hatcher.

SELECTION OF SWITCHES

(Continued from page 16)

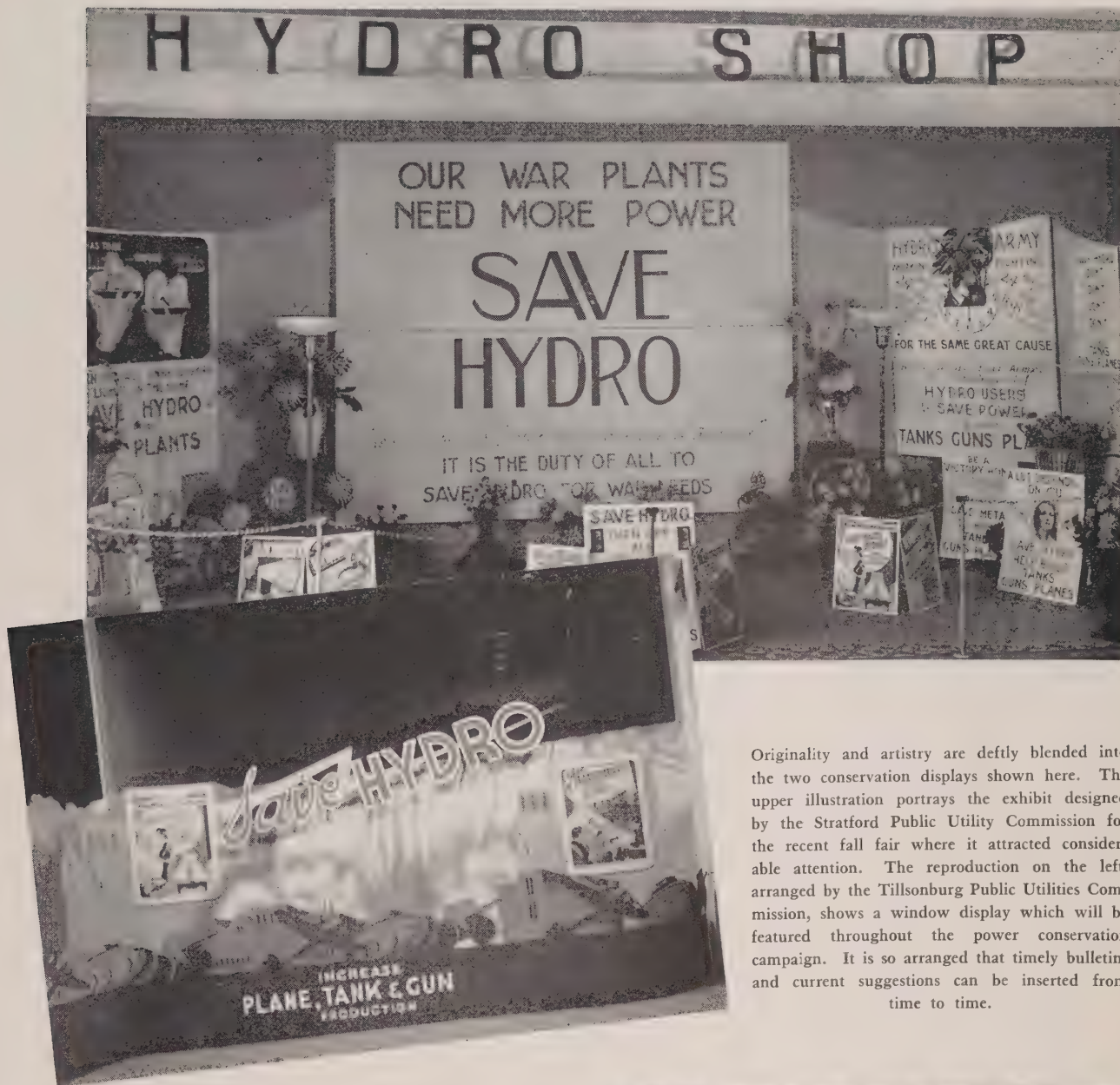
close to the rating of the fuses. Experience with this equipment, under these circumstances, has shown that frequently there is deterioration of contacts and, in some cases, failure of the protective equipment.

When it is known that the load on a power or lighting circuit will be continuous and will extend over a period of 2 hours or more, with an average load close to its maximum value, the maximum load current in amperes should never be more than 80 per cent of the current rating of the fuses and related protective equipment.

With approximately constant loads, or with constant loads (practically no variation or without variation in current throughout load duration) for extended periods, good practice indicates that the percentage figures used should be much lower.

It is hoped this explanation of heating of fused switches will be of assistance, inasmuch as it answers a question very often put to this department today. The Underwriters' Laboratories, Inc., and fuse and switch manufacturers are working on this problem in the United States, and should it be solved it would no doubt bring about a change in the standards in this country.

Stratford and Tillsonburg Conservation Displays



Originality and artistry are deftly blended into the two conservation displays shown here. The upper illustration portrays the exhibit designed by the Stratford Public Utility Commission for the recent fall fair where it attracted considerable attention. The reproduction on the left, arranged by the Tillsonburg Public Utilities Commission, shows a window display which will be featured throughout the power conservation campaign. It is so arranged that timely bulletins and current suggestions can be inserted from time to time.



F. T. Stocking

With 35 years of service to his credit—the second longest record chronicled in the annals of the H.E.P.C. to date—Frederick T. Stocking of the municipal engineering department retired at the end of last month. Mr. Stocking, who carries with him warm tributes from many friends and colleagues, is well known in the Yorks and adjacent counties. He first joined the Commission's staff in June, 1907, and excepting for the break of one year, has been with the H.E.P.C. ever since.



"The latest edition of the Hydro News arrived today and after reading it, would like to take this opportunity of commending the editors for the recent changes they have made in the magazine. We find it much more interesting and both the commissioners and staff enjoy reading it. Please accept our congratulations and convey them to those responsible."—J. R. Sullivan, manager, Woodstock Public Utilities Commission.

Around the Hydro Circuit

Born in Brockville in 1869, **Walter B. Reynolds**, chairman of the Brockville Public Utilities Commission, has had a long and varied career in the public service. When he left



Walter B. Reynolds

high school, Mr. Reynolds was employed in the office of a coal firm, and he remained in that business continuously until his retirement in 1936. At that time he was named president of Coal Carriers Limited, Brockville.

Mr. Reynolds was first elected to public office in 1905 as school trustee, and since that time has played a leading part in municipal affairs. He was Mayor of Brockville from 1923 to 1928 and has been a member of the Public Utilities Commission for 26 consecutive years. He is also an energetic executive officer of District No. 1, O.M.E.A., and a member of the Legislative Assembly for the County of Leeds, having been elected in 1937.

One of Brockville's leading citizens, Mr. Reynolds is an ardent supporter of municipally-owned Hydro.

District No. 7, O.M.E.A., has a new director in the person of **H. R. Henderson** of Woodstock. Proprietor of the Woodstock Lamp Company, which he organized about 20 years ago, Mr. Henderson also operates a lumber concern and contracting business in Exeter.



H. R. Henderson

The new official went overseas from Galt during the Great War and served with distinction in France from 1916 to early 1918 as a member of the first Canadian battalion. Later in 1918 he transferred to the Flying Corps and graduated as a pilot at the conclusion of the war.

Mr. Henderson is a married man with one child. He has played an active part in the civic life of Woodstock and has been prominent in public welfare work. He makes a hobby of sports.

William P. Kress, newly-elected director of District No. 6, O.M.E.A., was born in Kitchener, Ontario, moving to nearby Waterloo some 21 years ago.

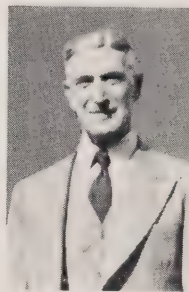


William P. Kress

Active in public affairs, Mr. Kress has been a member of the Waterloo Public Utilities Commission since 1934. He has also served for several years on the Public School Board and the Town Planning Commission.

In business life Mr. Kress is associated with the John Forsyth Company, Limited, as superintendent of the Waterloo plant.

A director of District No. 6 since 1940, **F. E. Welker** of St. Jacobs, was named to the executive of the O.M.E.A. early in 1942. Born near Stratford, Ontario, Mr. Welker moved with his family to Listowel, where he spent most of his boyhood days. For a few years he was in business in Listowel and its environs, and 35 years ago he moved to the village of St. Jacobs, which has since claimed him.



F. E. Welker

Mr. Welker has interesting recollections of the early electrical days of St. Jacobs. When he first arrived there the village had electric lights, the energy being supplied by a dynamo driven by waterpower in the flour mill of the late E. W. B. Snider. In 1915 Mr. Welker was elected as a trustee of the village and the following year plans were made to provide the conveniences of "Hydro". The building of new lines commenced early in 1917 and by August of the same year Niagara power was flowing into the village. In the 25 years that have followed, Mr. Welker has played a leading and active part in Hydro affairs.

The records show that **George E. Findlay** was born in Carleton Place, Ontario, in 1903. Following public and high school education in Carleton Place, Mr. Findlay entered St. Andrew's College and the University of Toronto, graduating in 1926 as Bachelor of Commerce. At the present time, he is Chairman of the Carleton Place Public Utilities Commission.



George E. Findlay

Casting about for a career, the versatile Mr. Findlay served a short time as a cattle boat hand on the European route but gave up the seafaring life to enter business. For some years he has been with Findlays Limited, stove and range manufacturers, where he is now sales manager. Mr. Findlay is a member of the Stove Advisory Committee established by the Controller of Supplies.

Appointed to the Public Utilities Commission in 1930, he has been a member ever since that time, acting as vice-chairman from 1932 to 1934 and as chairman since 1935.

Mr. Findlay is married and has two children. His hobbies are photography, golf, fishing, duck hunting, and—for good measure—ornithology.

This type of conservation card, which is particularly suitable for use in industrial buildings, was first prepared and introduced by the Woodstock Public Utilities Commission.





Four camera impressions of this year's At Home are recorded above. The two upper flashes, A and B, caught some action on the ballroom floor where interesting interpretations of the terpsichorean trend were demonstrated. The lady (C) who has just released the "alley apple" to "spare it up" is Margaret Sweeney. Her contemporary shown in D, is waiting for the "pin chasers" to take cover before rolling what she hopes will be a strike.

HYDRO AT HOME AIDS WAR FUND

AN event which is keenly anticipated each year by many H.E.P.C. employees is the annual At Home conducted under the auspices of the Ontario Hydro-Electric Club. This year the occasion provided an opportunity for an evening's needed relaxation from the busy round of daily work.

In line with the club's wartime policy that social activities serve as a means to aid the war effort, the proceeds from the At Home were turned over to the War Services Fund. Since this fund was inaugurated two years ago, more than \$22,000 have been raised for distribution among recognized war service organizations, while close to 2,000,000 cigarettes have been sent to overseas military units, the British Red Cross and to some 700 Hydro men now in the armed forces.

The facilities of the Boulevard Club, Lake Shore Road, Toronto, were utilized by club members and their friends for this year's At Home which was arranged under the direction of the following committee: Roy E. Taylor, chairman; Miss Marion Shaver, W. V. Morris and F. B. Pope.

ANOTHER CONTRIBUTION

ACHEQUE for \$782.24, representing another contribution from the Field Branch of the Ontario Hydro-Electric Club, has just been turned over to The Evening Telegram British War Victims' Fund.

Representing members of the club outside of the Toronto area, the Field Branch has now contributed a total of \$4,837.89 to this fund.

DANGEROUS INGENUITY

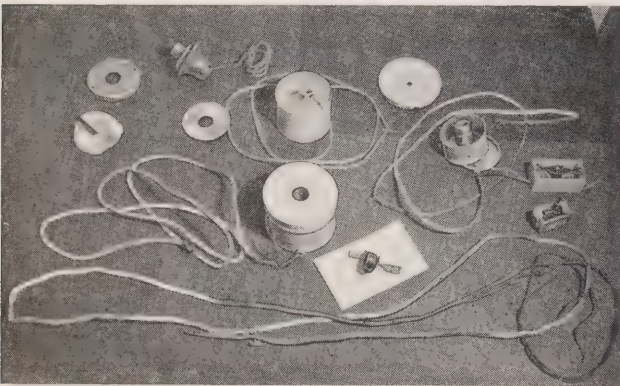
SOMETIMES it's dangerous to be too enterprising. For instance, take the story back of the picture shown here.

Believe it or not, this collection of painted cans, lids and single conductor wires comprised the lighting fixtures used in a Toronto home until they were brought to the attention of the H.E.P.C. electrical inspection department.

Hydro inspectors declared that it was the most dangerous installation they had seen.

It appears that the owner of a house in Toronto agreed to give his tenant a month's free rent on the condition that the tenant would wire the premises for electrical service. The tenant, therefore, decided to make his own fixtures. He assembled the necessary parts and put the improvised equipment into service, without obtaining a permit from the Commission.

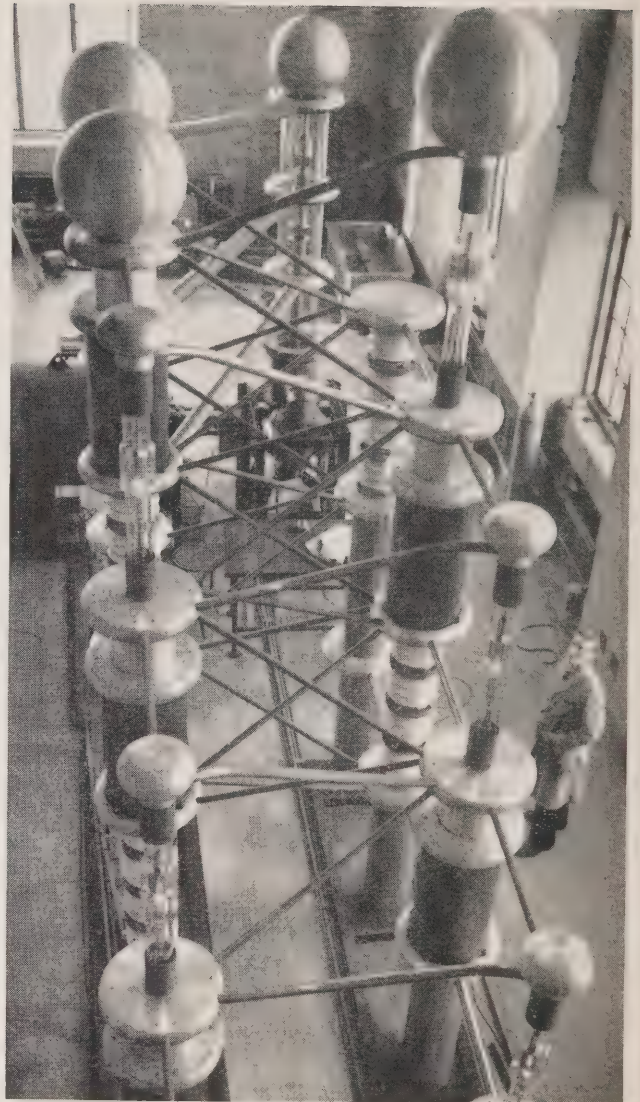
When other tenants moved into the house they were greatly bewildered by the unorthodox electrical fixtures and their method of operation and notified the Commission. The electrical inspection department investigated and brought forth some unusual evidence.



This illustration shows some of the home-made lighting fixtures which were in service in a Toronto home until they were brought to the attention of the H.E.P.C. electrical inspection department. The tenant who made them used a heterogeneous collection of parts and materials, including discarded coffee cans and lids, single-conductor wires and old sockets and switches.

The wire for the job was made by laying two single-conductor wires side by side and enclosing them with friction tape, not lapped but enclosed lengthwise. Cotton thread was then wound around the assembly to hold the tape in place, and wood screws were inserted between the two conductors for mounting.

The lighting fixtures were made from discarded coffee cans, in which a standard medium-base socket was located. A hole was punched in one side of the can to form an entrance for the wires. The lid of the coffee can was put in place to conceal the socket, while the lamp bulb joined the socket after passing through a hole in the lid. In most cases the can cover was first secured to the ceiling, with the can itself then fitted into the cover. After installation of the fixtures and attachments, the room was prepared to conceal the wiring.



This is a 600,000-volt X-ray installation in the Division of Physics and Electrical Engineering at the National Research Laboratories. It is part of the equipment available for the inspection of metal castings and welds used in the construction of aircraft and for the standardization of X-ray dose meters.

In the photograph can be seen a switch mounted in a small wooden box. This arrangement was found set in the wall. Also shown is a switch with a broken mechanism. The fixture was fastened to a piece of strap metal and had been carefully inserted in a wall opening. This particular switch was used to control a hotplate, but being of insufficient capacity it probably burned out soon after installation.

Another device, not shown in the photograph, was a doorbell. It was connected to the 110-volt supply circuit and had a lamp bulb in series with a push button. People who rang the bell on wet days were greeted with an unexpected electrical shock when they pressed the push button.

While necessity is generally acknowledged to be the mother of invention, in the case of electrical fixtures the use of substandard equipment constitutes a serious hazard to life and property.

"BITS AND PIECES"

By **W. R. Harmer**

Co-ordinator for Ontario Public Utilities
Wartime Workshop Board

DURING the past year, the Hydro machine shops have fabricated and machined more than 24,500 pieces, representing 70,000 man-hours of work at a total cost of approximately \$120,000.

These results are all the more impressive when it is remembered that the shops have made this contribution to the war effort while carrying on regular maintenance work.

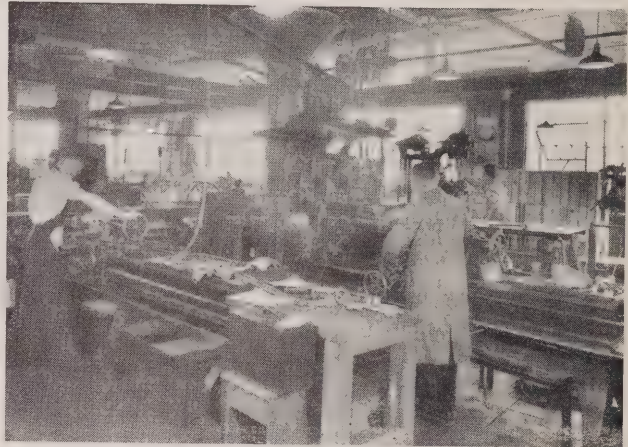


W. R. Harmer

There are many interesting features to this work. For instance, in the assembly of a trawler crankshaft, dry ice was used to shrink the crank pins for insertion in the crank webs. By this method, the pins were left in the dry ice for several hours and the temperature was reduced to 130° F. below zero. This low temperature caused a shrinkage of about 1/1000 per inch of crankpin diameter which, when inserted in the pre-heated webs, resulted in a perfect shrink fit.

Another set-up was used to machine a 7-foot radius on small links. Owing to the scarcity of large boring mills, this job was being done by hand in several plants. H.E.P.C. engineers rigged up a special lathe head involving a slide and roller arrangement which carried the work past a stationary tool and resulted in the proper contour being cut on the radius links.

By carefully studying the machining requirements on any job, it has been possible to obtain excellent results with-



This illustration shows a section of the Hydro machine shop at Strachan avenue, Toronto, whose facilities and staff are being utilized in the "Bits and Pieces" programme.

out the necessity of purchasing new special purpose tools. The Department of Munitions and Supply have complemented Hydro on the work which is being done, and particularly on the fact that Hydro technicians have been able to do special work on standard tools, by the ingenious use of special jigs and fixtures.

The Toronto Hydro-Electric System has recently joined the "Bits and Pieces" group and has made available the facilities of their Scott street machine shop to do war work. They have been very successful in removing bottlenecks on planning work for machine tool builders, and are now undertaking the assembly of several large blower units for the steel industry.

Present work on hand and prospects for additional work indicate the vital importance of the part taken by our men and machines in Canada's vast war production programme.

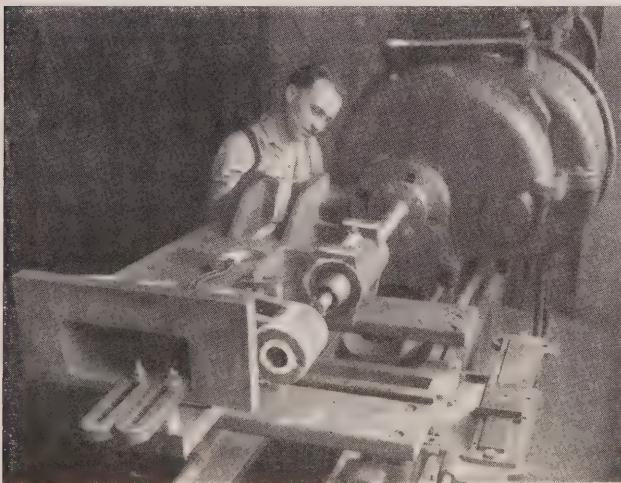
George Gathercole of the executive staff at the H.E.P.C. Head Office Building is now a sub-lieutenant in the navy, and early next month **R. H. (Bob) Hillery** of the same staff will be an engineer lieutenant also in the navy.

Mr. Hillery, who started with Hydro as a telephone operator in 1924, commenced his university course at U. of T. in 1927, worked with Hydro during the summer months, graduated in electrical engineering with a B.A.Sc., degree in 1931, and returned to the Commission. He will start his naval career at Halifax, Canada, on January 1, 1943.



R. H. Hillery

Mr. Gathercole graduated in economics at McMaster university, and took post graduate work at the School of Economics in London, England. He has been with the Commission for three years.



In the Hydro machine shop at Queenston, this worker is shown doing what is called a lathe boring operation on turning engine brackets for a 2,500 horsepower marine engine.

STILL GOING STRONG

That well-known song, "We've Come a Long Way Together", might have expressed the feelings of Austin W. Anderson and William C. Ives of St. Catharines, Ontario, recently. On November 18, Anderson and Ives, both employees of the DeCew Falls



generating station, marked the completion of 30 years' service, having come to the power plant together in 1912.

Two years after joining the staff of the plant (then the property of the Dominion Power and Transmission Company), Mr. Anderson was transferred to operating duties, a position he still holds. He is now district representative for the H.E.P.C. Employees' Representation Plan.

Mr. Ives, who before coming to the station had assisted in its construction, has for the past 21 years acted as operator of the switchboard. He has not lost a day's work at the plant since 1918.

Both men hope to work together for many more years.

A LADY PEEKS AT THE PEAKS!



The hand that rocks the cradle runs the powerhouse! Located at a dam on the Credit river, the village powerhouse in Streetsville, was operated recently under the vigilant eye and dexterous hand of Mrs. J. A. Temple, wife of the regular station operator.

It all happened this way. Mr. Temple was looking forward to a pleasant holiday this year, but wartime labour conditions being as they are, no likely substitute appeared on the horizon. After having resigned himself therefore to a vacationless twelvemonth, his hopes were suddenly revived when his wife volunteered to take on the job. After watching him manipulate the water control levers for many years, she felt that with a little coaching in the meter-reading technique and a bit of practical training, she could carry on for a few days. With typical feminine adaptability she mastered the necessary operations, and so while the proud husband set off on a well-earned trip, his resourceful wife acted as custodian of the powerhouse.

HYDRO HUSKIES

IN the lonely, snowbound outposts of Canada's North country, Hydro Huskies help maintain electric service.

Line patrolmen at Ear Falls, Hudson, Red lake, Uchi, Hailstone lake, Slate lake, Fry lake, Caw lake, Crow river T.S. and Rat Rapids use dog teams from November to April each year to patrol lines.

Some of these sledge-dogs are purebred huskies; others are crossbreeds of Husky and St. Bernard, and Husky and Alsatian.

A round trip, which is usually in the neighbourhood of 80 miles, requires from three to four days. It is, therefore, necessary to take sufficient food for men and dogs for that length of time. It is also essential to take spurs, linemen's belts, telephone, wire and any small parts of pole hardware that may be needed. In addition, these dogs transport materials which will be used the following summer. This material is left at convenient storage sheds along the line.



The first Hydro Husky seems to be bored by the cameraman, the second may have Hollywood ambitions, but the other two are apparently camera shy.

A team consists of from four to seven dogs, depending upon the size of the load to be hauled. These loads are often 400 pounds or more.

After the long cross-country run over ice and snow the dogs are fed in the evening on a well-balanced diet of oatmeal, cornmeal, rice, meatmeal, tallow and dog biscuits. Their masters sometimes stop long enough on some frozen lake to break the ice and catch fish. The fish are then boiled and mixed with the meal and given as a special treat.

This primitive, but efficient medium of transportation enables patrolmen to inspect the lines which would otherwise be inaccessible, except on foot. Thus, these Huskies are serving Hydro in Ontario's Northern Hinterland.

ON THE JOB

WITHOUT warning, officials of the Toronto Fire Department walked into the H.E.P.C. Head Office Building the other day. They entered one of the elevators, got off at the tenth floor, walked to the fire alarm box, broke the glass and pressed the electric alarm.

Within ninety seconds, Hydro firefighters with the completely-equipped fire truck were on the scene!

INCREASE RECORDED BY NIAGARA SYSTEM

Covering load demands for the first full calendar month since the introduction of restrictions by the Dominion Power Controller on September 20, the monthly load summary for October reveals a total primary load increase of 3.3 per cent over the corresponding month last year.

The restrictions combined with voluntary co-operation on the part of domestic consumers in power shortage areas have greatly "eased" present problems confronting the Commission in meeting the demands of high-g geared war industries.

Based on the maximum 20-minute peak horsepower load for the respective months, the figures apply to the operation of all four H.E.P.C. systems and the Northern Ontario Properties. The only primary load increase occurred in the Niagara system, where the demands of war industries recorded an appreciable gain of 97,319 horsepower, or 6.3 per cent, over October 1941. The total peak demand for primary load in October, 1941, on all systems was 2,096,717 horsepower, while for October of this year it rose to 2,166,561 horsepower.

Combined primary and secondary loads for the four systems and the Northern Ontario Properties totalled 2,265,796 horsepower, a decrease of 2 per cent from the 2,312,219 horsepower load of October, 1941.

PRIMARY AND SECONDARY LOADS

	Maximum 20-Min Peak H.P.		Per Cent. Increase
	October, 1942	October 1941	
Niagara System	1,676,273	1,682,975	— .4
Eastern Ontario System	176,895	180,650	— 2.1
Georgian Bay System	45,276	47,407	— 4.5
Thunder Bay System	106,716	128,539	— 17.0
Northern Ontario Properties	260,636	272,648	— 4.4
Total	2,265,796	2,312,219	— 2.0

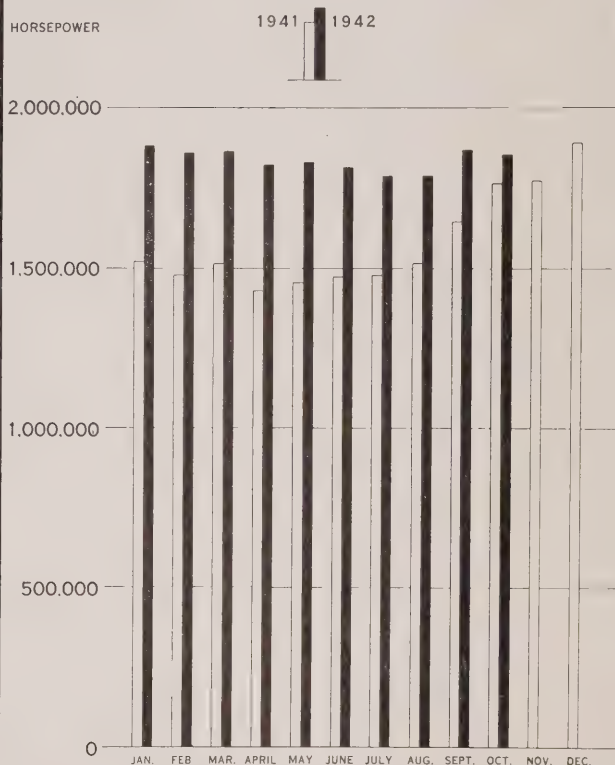
SARNIA HYDRO OFFICE WRECKED BY EXPLOSION



Damage estimated at approximately \$100,000 was caused by an explosion which wrecked the offices of the Sarnia Hydro-Electric Commission last month. An investigation which is now proceeding indicates that a possible defect in the heating system may have been the source of the trouble. There was no outbreak of fire and nobody was hurt. The illustration, left, shows the front of the office following the explosion which occurred at 3 in the morning. Hydro officials are shown (right) searching for office equipment.

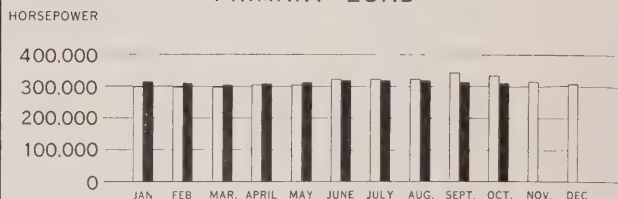
SOUTHERN ONTARIO SYSTEMS NIAGARA — GEORGIAN BAY — EASTERN ONTARIO

PRIMARY LOAD



NORTHERN ONTARIO PROPERTIES AND THUNDER BAY SYSTEM

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	OCT. 1942	OCT. 1941	
NIAGARA SYSTEM	1,634,316	1,536,997	+ 6.3
GEORGIAN BAY SYSTEM	45,276	47,273	— 4.2
EASTERN ONTARIO SYSTEM	176,895	180,650	— 2.1
THUNDER BAY SYSTEM	101,046	104,859	— 3.6
NORTHERN ONTARIO PROPERTIES	209,028	226,938	— 7.9
TOTAL	2,166,561	2,096,717	+ 3.3

MUNICIPAL LOADS, OCTOBER, 1942

NIAGARA SYSTEM (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,602	1,903	Essex	513	1,886	Palmerston	579	1,400
Agincourt	187	P.V.	Etobicoke Twp.	7,275	V.A.	Paris	1,628	4,604
Ailsa Craig	111	487	Exeter	654	1,654	Parkhill	167	1,029
Alvinston	102	649	Fergus	1,366	2,759	Petrolia	998	2,768
Amherstburg	808	2,704	Fonthill	187	860	Plattsville	118	P.V.
Ancaster Twp.	341	V.A.	Forest	513	1,562	Point Edward	1,669	1,199
Arkona	56	403	Forest Hill	6,799	12,172	Port Colborne	1,754	6,928
Aurora	1,277	2,821	Galt	11,307	15,126	Port Credit	824	1,934
Aylmer	856	1,985	Georgetown	1,604	2,452	Port Dalhousie	946	1,599
Ayr	153	760	Glencoe	193	763	Port Dover	457	1,790
Baden	524	P.V.	Goderich	1,459	4,674	Port Rowan	96	700
Beachville	637	P.V.	Granton	64	P.V.	Port Stanley	331	824
Beamsville	400	1,227	Grimsby	821	1,988	Preston	3,993	6,656
Belle River	185	836	Guelph	10,725	23,074	Princeton	114	P.V.
Blenheim	456	1,873	Hagersville	1,224	1,347	Queenston	130	P.V.
Blyth	125	662	Harriston	408	1,292	Richmond Hill	412	1,295
Bolton	197	629	Harrow	476	1,092	Ridgetown	516	1,986
Bothwell	120	683	Hensall	185	686	Riverside	1,113	5,235
Brampton	2,376	5,975	Hespeler	2,848	2,938	Rockwood	98	P.V.
Brantford	19,380	31,622	Highgate	80	322	Rodney	138	758
Brantford Twp.	968	V.A.	Humberstone	567	2,831	St. Clair Beach	81	138
Bridgeport	132	P.V.	Ingersoll	3,201	5,757	St. George	142	P.V.
Brigden	84	P.V.	Jarvis	195	513	St. Jacobs	308	P.V.
Brussels	151	784	Kingsville	542	2,453	St. Marys	1,358	4,009
Burford	191	P.V.	Kitchener	25,415	35,456	St. Thomas	7,510	17,045
Burgessville	44	P.V.	Lambeth	114	P.V.	Sarnia	10,721	18,599
Burlington	1,586	3,925	LaSalle	209	907	Scarborough Twp.	4,468	V.A.
Burlington Beach	426	1,474	Leamington	1,442	6,048	Seaforth	685	1,782
Caledonia	355	1,430	Listowel	1,388	2,984	Simcoe	2,411	6,340
Campbellville	39	P.V.	London	37,422	77,105	Smithville	158	P.V.
Cayuga	123	700	London Twp.	538	V.A.	Springfield	68	382
Chatham	6,080	17,184	Long Branch	1,268	4,258	Stamford Twp.	2,638	8,275
Chippawa	320	1,228	Lucan	157	643	Stoney Creek	238	933
Clifford	101	491	Lynden	104	P.V.	Stouffville	240	1,198
Clinton	631	1,879	Markham	305	1,175	Stratford	6,762	17,163
Comber	149	P.V.	Merlin	87	P.V.	Strathroy	1,429	2,834
Cottam	74	P.V.	Merritton	9,622	2,916	Streetsville	207	701
Courtright	50	355	Milton	1,371	1,915	Sutton	203	949
Dashwood	92	P.V.	Milverton	361	994	Swansea	3,101	6,907
Delaware	72	P.V.	Mimico	2,435	7,987	Tavistock	592	1,080
Delhi	375	2,430	Mitchell	697	1,670	Tecumseh	482	2,331
Dorchester	82	P.V.	Moorefield	41	P.V.	Thamesford	200	P.V.
Drayton	108	528	Mount Brydges	100	P.V.	Thamesville	182	816
Dresden	404	1,525	Newbury	28	288	Theford	120	598
Drumbo	94	P.V.	New Hamburg	575	1,441	Thorndale	80	P.V.
Dublin	35	P.V.	Newmarket	1,562	3,800	Thorold	2,265	5,284
Dundas	2,861	5,245	New Toronto	11,131	9,469	Tilbury	1,444	1,923
Dunnville	1,197	3,916	Niagara Falls	9,607	20,371	Tillsonburg	1,190	4,602
Dutton	240	830	Niagara-on-the-Lake	778	1,764	Toronto	334,266	657,612
East York Twp.	7,913	41,578	North York Twp.	9,003	V.A.	Toronto Twp.	2,806	V.A.
Elmira	944	2,069	Norwich	420	1,301	Wallaceburg	3,598	4,802
Elora	443	1,185	Oil Springs	186	541	Wardsville	29	221
Embro	126	420	Otterville	99	P.V.	Waterdown	195	867
Erieau	72	281				Waterford	474	1,294
Erie Beach	10	21				Waterloo	5,360	8,968
						Watford	342	1,023
						Welland	11,976	12,421

MUNICIPAL LOADS, OCTOBER, 1942

	H.P.	Popula- tion
Wellesley	103	P.V.
West Lorne	229	768
Weston	4,613	6,165
Wheatley	190	761
Windsor	48,524	104,415
Woodbridge	630	946
Woodstock	8,399	12,339
Wyoming	77	538

York Twp.	19,991	77,175
Zurich	133	P.V.

(25 and 66-2/3 Cycle)

Hamilton	151,328	164,719
St. Catharines	27,831	32,559
Trafalgar Twp.	490	V.A.

(66-2/3 Cycle)

Bronte	170	P.V.
Oakville	967	3,869

GEORGIAN BAY SYSTEM

(60-Cycle)

Alliston	344	1,700
Arthur	146	1,089
Bala	114	355
Barrie	3,931	9,559
Beaverton	210	941
Beeton	134	617
Bradford	206	1,041
Brechin	42	P.V.

Cannington	145	761
Chatsworth	68	333
Chesley	465	1,812
Coldwater	108	545
Collingwood	2,633	6,749
Cookstown	72	P.V.
Creemore	109	661

Dundalk	236	686
Durham	348	1,874

Elmvale	148	P.V.
Elmwood	46	P.V.

Flesherton	52	452
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Grand Valley	116	645
Gravenhurst	1,051	2,261

Hanover	1,325	3,190
Holstein	12	P.V.

Huntsville	1,103	2,943
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Kincardine	664	2,483
Kirkfield	24	P.V.

Lucknow	332	856
Markdale	163	776

Meaford	643	2,759
Midland	4,298	6,764

Mildmay	119	764
Mount Forest	449	1,936

Neustadt	42	431
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	H.P.	Popula- tion
Orangeville	699	2,558
Owen Sound	5,141	13,559
Paisley	106	730
Penetanguishene	983	4,177
Port Carling	108	520
Port Elgin	370	1,415
Port McNicoll	84	950
Port Perry	248	1,175
Priceville	10	P.V.

Ripley	87	420
Rosseau	29	305

Shelburne	241	1,053
Southampton	488	1,467
Stayner	269	1,106
Sunderland	66	P.V.

Tara	84	510
Teeswater	130	873
Thornton	30	P.V.
Tottenham	95	532

Uxbridge	276	1,480
Victoria Harbour	63	979

Walkerton	807	2,534
Waubushene	80	P.V.
Warton	255	1,750
Windermere	19	117
Wingham	512	2,149
Woodville	65	439

EASTERN ONTARIO SYSTEM

(60-Cycle)

Alexandria	198	1,976
Apple Hill	40	P.V.
Arnprior	1,082	4,019
Athens	99	626
Bath	34	325

Belleville	6,649	15,498
Bloomfield	117	636
Bowmanville	2,500	3,850
Brighton	368	1,462
Brockville	4,364	10,576

Cardinal	258	1,602
Carleton Place	1,739	4,143

Chesterville	255	1,094
Cobden	81	643

Cobourg	2,103	5,907
Colborne	180	960

Deseronto	154	1,002
Finch	67	396

Frankford	128	1,095
Hastings	89	823

Havelock	134	1,103
Iroquois	207	1,123

Kemptville	326	1,230
Kingston	12,351	29,545

	H.P.	Popula- tion
Lakefield	335	1,301
Lanark	74	686
Lancaster	45	570
Lindsay	3,521	8,345
Madoc	171	1,130
Marmora	133	1,004
Martintown	33	P.V.
Maxville	91	811
Millbrook	79	749
Morrisburg	191	1,484

Napanee	1,237	3,241
Newcastle	182	701

Norwood	122	710
Omeme	122	630

Orono	79	P.V.
Oshawa	15,805	26,610

Ottawa	33,944	150,861
Perth	1,631	4,197

Peterborough	11,442	24,977
Pictou	1,052	3,400

Port Hope	2,240	4,997
Prescott	1,243	3,283

Richmond	74	428
Russell	61	P.V.

Smiths Falls	2,493	7,741
Stirling	247	947

Trenton	4,514	8,183
Tweed	226	1,181

Warkworth	66	P.V.
Wellington	229	948

Westport	88	725
Whitby	1,482	4,236

Williamsburg	83	P.V.
Winchester	283	1,017

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	15,880	30,370
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Nipigon Twp.	213	V.A.
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Port Arthur	43,884	24,217
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NORTHERN ONTARIO

PROPERTIES

Nipissing District

(60-Cycle)

North Bay	4,366	16,013
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Patricia District

(60-Cycle)

Sioux Lookout	298	1,967
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Sudbury District

(60-Cycle)

Capreol	199	1,660
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Sudbury	9,459	32,731
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Power

PACES ONTARIO'S WAR PRODUCTION

Hydro and Ontario's Industries work side by side to produce the weapons of war!

The roar of Ontario's industries, working twenty-four hours a day, is thundering Canada's challenge to the Axis. Production is mounting month by month. Records are broken with almost monotonous sequence. The trickle became a stream . . . the stream has turned into a torrent reaching every battle front.

And the power that helps make this production possible is Electric Power.

Power is essential to our war effort. Until peace comes Hydro turbo-generators will continue to produce this vital element day and night, without rest . . . helping Ontario's industries set the "all-out" pace for Victory. Greatly increased quantities of power have been provided by Hydro since war began. However . . . even with this additional supply . . . there is not enough today to permit wide-spread use as in peace-time. Already many Hydro consumers have voluntarily played a splendid part in saving electricity. But there can be no "let up"—this conservation must continue and be increased to provide power to meet the growing demands of war industries.

We look to the days of peace when there will be power for every use. In the meantime . . . do your part . . . invest in Victory by saving your share of electricity every day.

AUG 8 1990

